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## ORIGINAL ARTICLES.

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### SECTION OF ORAL AND DENTAL SURGERY.

(*Concluded from page 602.*)

DISCUSSION ON DR. MARSHALL'S PAPER ON

### THE RHEUMATIC AND GOUTY DIATHESIS, AS MANIFESTED IN DISEASES OF THE PERIDENTAL MEMBRANE.

Dr. Williams:—Mr. Chairman, I have a few words to say, and that is that this paper seems to me to be a very sound and rational paper in every respect. There is a point of originality in the cause of secretions which strikes me as quite new. Another point that I fully concur in is that the local treatment, whether by ploughing with instruments or by application of various medicaments, will not produce the preventative action we want.

Dr. Noble:—I was very much interested in one or two points in the paper, and that was the source of this deposit that we find frequently in these deep seated troubles, and I know that we want to seek for something besides a local cause. I was very glad to see a proof of Dr. Marshall's ability in that direction. I have not much to say because this is rather a new thought to me in looking for these troubles; but I shall in the future try to observe some facts drawn out by Dr. Marshall's paper. I have not the slightest doubt but they are derived from correct observation. I think we must look to the system far more than we have looked in general treatment. It is rather in the general system than in local causes that we should look in many of the most marked and deep seated troubles. I rejoice to see a paper with the perfection with which this paper was placed before us, and shall read its publication with a great deal of interest; and try to see if the statements made by Dr. Marshall can not be verified by observation in my own practice.

Dr. Whitefield:—I would like to say a few words about a case that bears on this subject. I have in mind a patient who came to me seven years ago with almost perfect teeth, but her gums were highly lacerated. The explanation she gave was that she used to have a desire to probe her teeth continually and thought that caused the trouble. At the time I did not understand how to treat her; but later on I found the lady was suffering from a rheumatic diathesis, and every once and awhile this would occur. As I knew her better, I now can recall that she would have this trouble about the time she would have the rheumatic trouble. She was past the middle period of life and had almost perfectly sound teeth. She was very cleanly about her teeth and I never could find a particle of tartar about her teeth. I am therefore confident that Dr. Marshall's deductions are correct.

Dr. Daniels:—I would not attempt to discuss a paper like this without some preparation. I certainly think that in all of these papers there ought to be some time allowed for criticism. I have no doubt, from the style of the paper, that Dr. Marshall has given a great deal of thought to it, and thought that will lead in the right direction and that we should learn more about the manner of investigating this very serious trouble. I would like to hear others on the same subject.

Dr. Taft:—Gentlemen, I have had a great many ideas on this subject in my time, some of which I think were good, and some of which I thought at the time were good, proved afterwards not to be very good; a variety of ideas. In reference to these particular deposits upon the root of the tooth in connection with the suppuration that takes place between the root of the tooth and its surrounding tissue in the disease of the periosteum, or tissue surrounding the cementum, it is found in various forms as you all know. Sometimes it is more dense than ordinarily. Sometimes there is a considerable amount, in thick clumps, and in some cases largely distributed over the root of the teeth. I think it is always of a darker color than ordinary salivary calculus. There are a great many varieties and it will be interesting to follow them out and the paper leading in that direction. It would be an interesting question to decide fully by induction the action of these various presentations of this trouble. The deposit is sometimes very rough

on its surface, in other instances quite smooth. However it may be in these respects, it presents a surface in which the tissue can never unite, and while it remains there will necessarily be a diseased condition. That it comes from the saliva there is no evidence whatever, as indicated in the paper. It was formerly assumed by many that it occurs in the same way that ordinary saliva calculus does; but there are so many counter-indications, that this theory can not be considered as correct; and we must look for the trouble elsewhere. I have no doubt this material is a deposit from the blood. Where this disease takes place, how this disease begins, perhaps is not so easily explained; that is, how the disease occurs in connection with this condition of affairs. As a matter of course there must be an irritant in the part before any deposit takes place; that this deposit is a primary thing in this respect I do not believe. I think it is a consequence of the diseased condition that existed before any deposit at all was formed. What the irritant or cause of this disturbance is in the first place, I will not now pretend to say; only that it is at first a point of deposit, a point upon which vicious matter is retained, that becomes more and more vicious as it remains. Dead material that comes into such a pocket or space will be more likely to be retained on this roughened surface. It occupies the place that living tissue ought to occupy, and then again where it is rough, and sometimes it is found very rough, it consists of little nodules all over the surface. Allowing the tissue to come in contact with it will create irritation. There will be irritation induced by pressure against it, and when there is a rush of blood to the part, an enlargement of the vessels in the immediate vicinity thus occurs. This sensation has been referred to by Dr. Marshall, that persons desirous of assuaging pain will do so by pressure upon the teeth, and that will give relief. By pressure it relieves the distended vessels, and then by letting up again there is a sense of relief.

Well, then, the question occurs, what shall be done; mere systematic treatment will not do. I do not believe that after this deposit has been made upon the roots of the teeth that it can be removed by systematic treatment. It is true, that if the system is in bad condition it may be improved, and whatever may be done in that respect increases the tone and strength, and often relieves the system of embarassment of this kind; although it will not remove this particular deposit. It is sometimes confined to the end of the root and there may be very little of a pocket. Sometimes it may be found on teeth on one side, sometimes at the end; in molar teeth it is often in the bifurcation of the roots. Its frequent point of deposit in such locations renders it exceedingly difficult to remove, as this material does not readily dissolve by solvents; that is, where there is a large mass of it, it is not readily dissolved. In testing the solubility of this material in sulphuric acid it does not readily dissolve; so that what should be done with it is a question that is difficult of solution. If there is a pocket running down, it may be removed with a fine chisel-shaped scaler; but what shall be done when there is no pocket, when there is not a large space around the edge of the root. I have not long since seen superior molars removed with three well-defined roots, in which, at the bifurcation, there were large masses of this material. In a case of mine where the patient was exceedingly anxious to save the tooth, which we always try to do when we can, he had given it treatment both surgically and with applications; but the tooth had to be taken out. Upon the outside of the roots where they could be reached with a scaling instrument they were in good condition, but where the surfaces were inaccessible by the instrument, sulphuric acid had been used, but with very little effect. Now a case of this kind is very difficult to manage.

Another point is, what shall be done in the way of prophylaxis, before any disease has taken place? Can any treatment be employed before other disease commences? Are there any indications, are there any symptoms in the beginning that will aid you, and for which remedial or preventive treatment may be employed? These are points to which attention ought to be given and which we ought to study as thoroughly as possible in order to attain to an effective treatment or management of such cases. When we speak of prophylaxis, I suppose we speak of management of the body in such a way as to divert or prevent disease. What can be done to prevent this, and when that is ascertained what treatment may be employed to prevent or cure this condition? I fancy that we do not sufficiently understand the beginning of diseases of the teeth, and that therefore our prophylactic treatment and suggestions with reference to prophylaxis is quite below what it ought to be, and what it ought to be for the best interest of our patients.

What light ought we to have on this subject?

Dr. Whitefield:—It seems to me that the value of Dr. Marshall's paper is that it does not point out treatment except in a general way. The question we ought to know is whether persons with rheumatic diathesis are more liable to have trouble.

Dr. Marshall:—Mr. President, I purposely avoided in my paper any reference to a special method of treatment. My idea was to present a paper on the pathology of the condition; and of course, as the title of my paper indicates, I confined it to the manifestation of rheumatic and gouty diathesis as manifested in diseases of the peridental membrane. In reply to Dr. White-

field's question I may say that I have never noticed any difference between living and dead teeth so far as the manifestations in the peridental membrane are concerned. The remarks of Dr. Taft deal very largely with the point brought out in the paper with regard to location of concretions on the teeth and their character. Dr. Noble asked a question which I do not think was fully understood; whether these concretions were found at the apex or upon the root of the teeth where there was no external opening at the margin of the gum, which proves, I think, my position. I claim such conditions exist as a result of rheumatism and gout, viz: that the concretions are not of salivary origin. The issue I take with Dr. Ingersoll is, that these deposits are not necessarily the result of suppuration, or that lime salts are deposited as the result of inflammatory conditions. I claim, on the other hand, that the concretions just referred to are the results of a rheumatic or gouty diathesis, and are deposited upon the cementum through the agency of the peri-cementum, just as concretions are deposited in the synovial membrane in rheumatic arthritis. I have never seen a case which I classify as rheumatic without finding concretions present; but phagedenic peri-cementitis is not always the result of a rheumatic or gouty diathesis. You will find a great many cases of phagedenic peri-cementitis in which the roots of the teeth are perfectly clean. To illustrate, and I mentioned this in a discussion some years ago before the American Dental Association at Minneapolis, phagedenic peri-cementitis is often the direct result of peculiar neurotic conditions of the system. I recall the first case of this character that came under my notice, a patient with facidental peri-cementitis. When the patient came into my hands I tried to find concretions upon the roots of the teeth, but could find none, and I was at a loss to explain the difficulty. I made up my mind after careful study that it was a neurotic condition, or at any rate a reflex nervous condition that affected the general health, and suspected from certain symptoms that she was suffering from some uterine displacement, so sent her to a specialist with the request that he would thoroughly examine the case. He reported that she had an anteversion of the uterus and replaced it; and in less than three months her mouth was well. All the treatment she had at my hands was an antiseptic mouth wash, and the replacement of the uterus by the specialist. I have noticed also other cases in which individuals suffering from diseased conditions of remote organs had this same condition of the teeth. Phagedenic peri-cementitis is often associated with Bright's disease and diabetes mellitis. Concretions upon the roots, however, are the most common cause that produce this condition of the peri-cementum.

Dr. Taft:—What is your opinion in regard to the presence of these secretions in inflammatory cases?

Dr. Marshall:—I claim the concretions are the cause of the inflammation; they are the result of the peculiar diathesis of the system, and not the result of the inflammatory action. We find in the synovial membranes that acid crystals are deposited there and by their presence cause irritation. We sometimes find associated with these crystals the calcium salts; and the longer the disease has been running, the more likely is it that we find this peculiar condition of the concretion, that is the presence of lime salts. I have not been able yet to demonstrate by chemical analysis whether or not the concretions upon the roots of the teeth are really made up of urate of soda and lime salts. I hope sometime to be able to make the analysis; and if I get hold of a case in which the teeth must be extracted and I am sure the disease is caused by this rheumatic diathesis, I shall submit it to the best chemist we have in Chicago with instructions to examine thoroughly and report as to its composition. That is the only way to prove the theory that I have advanced.

Dr. Whitefield: Do you not consider that there may be soreness long before actual deposition?

Dr. Marshal: That is one of the general symptoms of this rheumatic or gouty condition of the system. You will find in scores of cases that the very first symptom of rheumatic trouble presented will be soreness of the teeth. In a great many cases they do not progress beyond the stage of congestion, which simply results in soreness and thickening of the membrane; a great majority, however, of the chronic cases result in exostosis of the roots and in enlargement of the epiphyseal ends of the long bones. The cases in which there are pus pockets formed are comparatively small in comparison to those that result in periodical soreness of the teeth, with thickening of the peridental membrane.

Dr. Williams: I hope Dr. Marshal will report after he has made the experiments.

Dr. Marshall: Another point I would like to mention is that in regard to the systematic treatment. I indicated in my paper that in a great number of these cases I analyzed the urine and found that the uric acid was largely in excess. In a case of this kind, I would say to my patient you are living too high, my friend, again; you will have to cut off your wine and eat no more meat, but be a vegetarian; and just as I restricted him in these things his symptoms improved. This class of cases are just as amenable to systemic treatment as the ordinary cases of inflammation of the joints. If you take it early enough you can control the symptoms; and it was this fact, as I mentioned in my paper, which led me up to the thought which I have presented with regard to the origin of many of these affections.

Dr. Whitefield: The last point is where the value of your paper lies.

(Here Dr. Taft read his paper on the "Care of the Teeth.")

Dr. Whitefield: This is a subject that interests me very much. I have always thought that a man's position depends very much on the way he regards itself. A dentist may be what I may call a scavenger, or he may not, just as he pleases. I certainly would never do any of this kind of work. If a man comes to me with his mouth filthy, I will tell him in as delicate a manner as possible to go home and cleanse his mouth; and if this is done rightly he will not take offense. I have seen cases where the mouth is so filthy that I would not handle it under any circumstances. I will point out to them and tell them what harm they are doing their teeth by letting them get in that condition. I find in most cases that when such people come back they have their mouths in good condition; they have thought about what I said. I impress upon them this point that if they will do their part, I will do mine; otherwise I will not do their work. I charge good fees, and my patients expect to have good work done. If they follow my instructions my work will stand and will be a credit to me. I think this matter should be emphasized more than it is by every dentist.

Dr. Williams:—I am very glad that Dr. Taft read that paper, because he refers so strongly to the necessity of dental hygiene and about the frequent neglect of dental hygiene. How often do we find teeth to fail even when well filled, because the general health of the mouth is neglected. Why is it? I think I can point out part of the reason why it is. It is because a man calls himself simply a dentist and thinks that all he has to do is to attend to a particular tooth. The fact is that he ought to be qualified so as to take just as good care of the health of the mouth. We should be orists. That is the proper name for an educated practitioner. As Sir Morrell Mackenzie says, the mouth is the gate of life; we stand guard over that mouth and not simply over the posts, or whatever you call them. We take charge of the whole mouth. If we have a pride in considering ourselves orists, I think we will naturally take a higher standpoint of vigilance than is generally taken.

Dr. MacNaughton: — The university from which I have the honor of being graduated impressed this on the students, that we have the right and privilege to charge whatever we think our services are worth; one of these services is to cleanse the teeth perfectly. The perfect cleansing of the mouth of a patient often does them more good than anything we can do for them. I have frequently advised my patients to cleanse their teeth, but if they will not do it I will do it myself and think it will redound to the credit of the profession and educate the public.

Dr. Whitefield:—I thoroughly agree with the lady. What I meant to say was that where I could induce my patients to cleanse their mouths themselves I would do so.

Dr. Taft:—The conservation of the health of the mouth is a great matter; the preservation of it in the best possible condition to resist diseases of the tissue of the mouth. The mouth is the territory of the orist; it is the territory which is committed to his care, and he must do whatever he can to promote its best interests and he ought to be able to know and understand the condition and whatever is necessary to improve them. It is vastly better to preserve teeth and the mouth in a condition of health, usefulness and comfort, than it is to restore them after the incursions of diseases; and this is just the point I make, that this matter is overlooked. You will often treat a tooth to secure a good condition for life perhaps, whereas if neglected ruin would ensue so far as the tooth is concerned. It is to arouse attention to this subject that I have prepared this paper.

Dr. Williams then gave a brief epitome of his paper, "Remarks on Incipient Necrosis and Caries;" there not being time to read it, after which the session was adjourned sine die.

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## PHARMACOPŒIAL NOMENCLATURE, AND THE LATIN OF PRESCRIPTIONS.

*Read before the Section of Materia Medica and Pharmacy, at the Forty-second Annual Meeting of the American Medical Association, Washington, D. C., May 1, 1891.*

BY PROF. JOS. P. REMINGTON, PH.M.,
OF PHILADELPHIA, PA.

The frequent recurrence in current secular literature, and in halls of legislation, of the agitation against the use of Latin in prescribing and designating medicinal substances has developed a need for a strong expression of the well known advantages of the use of the Latin language in nomenclature.

The pharmacist, because of his familiarity with the methods employed by many physicians, and on account of the large number of prescriptions which annually come under his critical observation, has by far the best opportunity for forming an accurate opinion of the relative value of the methods used in writing prescriptions, and the consensus of opinion is vastly in favor of retaining Latin.

By far the larger number of prescriptions which are now compounded in the United States are written in Latin, but occasionally it will be found that a physician has formed the habit of writing in the vernacular.

The general acceptance by the medical and pharmaceutical professions of the nomenclature

of the Pharmacopœia during the last half century, has had much to do with the improvement noticed in the language of prescriptions, and although it is common to hear unfavorable criticisms as soon as a new Pharmacopœia is issued, about the inconvenience of alteration in nomenclature, especially when well established names have been changed; yet when improvements are made that must upon second thought be universally acknowledged as such, and particularly when the revisions which are carried out recognize the cardinal principles of simplicity, uniformity and accuracy, then, and then only, can the changes be cheerfully welcomed.

The first Pharmacopœia, published in 1820, presents some curious illustrations of defective nomenclature; for instance, the name aqua potassæ was applied, in the same book, to two official preparations, one aqua potassæ on page 82, made by dissolving one ounce of bicarbonate of potassium in a gallon of water and saturating the solution with carbonic acid; the other, on page 188, corresponded with our present liquor potassæ, and was a caustic solution sixteen times stronger than the other aqua potassæ.

The various committees of revision which have been appointed at every decade since then, have successfully wrestled with the subject of the nomenclature, advances being made at each revision, but not without sturdy protests and often severe denunciation for "introducing innovations" from those who believe that the use of a bad name "once established" is to be preferred to the use of a correct name, if such involves a change.

But the committee have never been wanting in the necessary courage to make such revisions in the nomenclature as they believed were warranted at the time; they have, however, always stopped short of what they considered their ideal in deference to a wise conservatism which realized fully that the names of widely known and largely used medicines should not be changed without just cause.

The greatest number of alterations in the various revisions have been made in the names of the chemical substances in the 1870 Pharmacopœia; this was due of course to the upheaval in chemical nomenclature which occurred at that time.

The committee of 1850, however, chose to ignore the controversies of the chemists in the case of two very important substances, calomel and corrosive sublimate; it may be remembered that the equivalent of mercury, as it was then called, was variously stated by chemists as 100 and 200; this gave rise to serious differences in nomenclature. If 200 was regarded as the proper equivalent, then corrosive sublimate became the bichloride of mercury, and calomel would be the chloride or proto-chloride of mercury; whilst, if 100 was regarded as the correct equivalent, corrosive sublimate must be considered to be the chloride of mercury, whilst calomel would be the di-chloride, or sub-chloride.

It will then be seen that whenever a physician ordered chloride of mercury in prescriptions, the apothecary was always put to the necessity of guessing whether calomel or corrosive sublimate was wanted; this embarrassing and often dangerous situation in nomenclature was satisfactorily cured by the committee of 1850, who adopted names for the mercurials in which the distinctions were based upon their physical properties rather than their chemical composition, and the official name for calomel became hydrargyri chloridum mite, and that for corrosive sublimate, hydrargyri chloridum corrosivum; in the case of the iodides of mercury the difficulty was overcome by Latinizing the colors of the two salts, and hydrargyri proto iodidum became hydrargyri iodidum viride, and hydrargyri deuto-iodidum was changed to hydrargyri iodidum rubrum.

These names have now become established, and they are not likely to be changed in one generation.

Old physicians will continue to use these ancient names, and it frequently becomes a question of serious importance to the pharmacist to know when hydrargyri chlor. is directed, just what to dispense; this is particularly difficult to judge at the present time, when the doses of calomel seem to be growing infinitesimal, and the former wholesome fear of corrosive sublimate seems to be greatly disappearing in the light of its extensive employment.

The various colleges of medicine are of course doing excellent service in teaching students the pharmacopœial nomenclature, and each succeeding generation of physicians will largely use the improved forms, but a careful inspection of an active prescription file will show that a large number of antiquated terms are still in common use.

The marvelous growth in the number of substances introduced into the materia medica during the last decade, particularly in synthetic products which possess antipyretic or sedative properties, and the astonishing progress made in developing chemical industries devoted to the manufacture of special products of more or less value, has had a curious effect upon the system of nomenclature which is now generally accepted; of course it has long been established as an axiom that the chemical name of a substance should accurately define its constituents, and in simple or binary compounds this rule meets with no obstacles; the fact that the substance known officially as ferri iodidum, iodide of iron, or its synonym ferris iodide, is composed of certain proportions of iron and iodine, is an illustration of the beautiful simplicity of the method which every tyro in chemistry is perfectly familiar with; but when

it is recognized that the treatment of disease cannot be cribbed and confined by the use of such easily named and readily understood remedies, and that now such ponderous looking compounds as Diethylsulphondimethylmethane, acetophenone, phenylacetamide, para-acetphenetidine, phenylhydrazinelevulinic acid, phenyldimethylpyrazolon, therahydroparaquinanisol, methylterhydro-oxyquinoline, carbonate of sodium, are in common use for the simple operations of lowering the temperature, diminishing the frequency of the pulse, or inducing sleep.

It is true that the manufacturer soon recognized the practical difficulties in the way of prescribing such remedies by their correct chemical names, and that it was easier for a physician to write instead sulphonal, hypnone, antifebrine, phenacetine, antipyrine, antithermine, thalline, thermifugin; and then again it was *easier* to obtain a copyright for an original name devised for the purpose, and thus the monopoly for its manufacture could be securely protected.

It is unfortunate that some simple yet descriptive nomenclature cannot be devised for this class of complex substances which are now so largely employed.

It is, however, in the naming of plants and vegetable drugs that the present official system is seen to the best advantage, and the value of such simple names as opium, buchu, calumba, etc., is enhanced by the simplicity of the titles of preparations made from them as tinctura opii, extractum buchu fluidum, infusum calumbæ, etc.

In those instances which sometimes occur, where two or three plants are indiscriminately used under one name, the pharmacopœia, by its description, carefully designates the plants which may be used. For an illustration, the case of rubus may be cited, which is described as "the bark of the root of rubus villosus, rubus canadensis and rubus trivialis," thus showing that the root from either or all of these plants may be employed; but for lobelia but one lobelia is recognized, *i. e.*, lobelia inflata, the species syphilitica and cardinalis not being accepted as of equal value; and it is in connection with the vegetable drugs that the merit of a well-defined and carefully considered system of Latin nomenclature is conspicuous.

The Latin name of the plant is almost always well established by botanists, and is not liable to change. Of course, plants which are of comparatively recent discovery may be attributed to incorrect sources, and subsequent revision is needed; but what shall be said about the common English names of plants, and what dire results would flow from the practice of prescribing through the use of these names.

A few years ago an editorial appeared in an influential daily newspaper, stating that the Legislature of the State of Pennsylvania would be asked to pass an act requiring physicians, and all other persons engaged in prescribing medicines or drugs for the sick, to write the names, quantities and designations of the same plainly, in the English language and without abbreviations, and that all druggists, vendors, or compounders of drugs, medicines or herbs for the use of the sick, shall be required to label or print the names thereof conspicuously on the outside of the bottles, pots or packages containing the same, in the English language and without abbreviations.

Since this act was framed, in a number of other States, similar legislation has been sought, and the arguments used by the worthy editor of the newspaper so clearly present the views of those who sincerely believe in such legislation, that a few extracts are inserted:

"The intent of the proposed act is to prevent the poisoning of people by the blundering clerks of druggists. Any reform which will tend to reduce the chances of error deserves commendation, and especially so if it is a reform that is proposed in conformity with the requirements of common sense. There is no considerable reason why an *American* physician, who wishes to order medicines from an American drug store, should express his wish in mutilated fragments of a dead language. The drug clerk can understand his own language much more easily than he can interpret Latin abbreviations. Only one excuse for the retention of the dog-Latin prescription can be imagined, and that is an excuse which neither physicians nor druggists are likely to present. It is that doctors sometimes do not care to have their patients know what medicines have been prescribed. One of the first natural rights of a human being, however, is to know what is the name of a substance that is put into his own body; and he has the right to know what medicines he is taking, even if he is unable to comprehend their purpose and operation."

This editor was finally induced to change his views, and the act was pigeonholed, but the means by which it was accomplished did not reflect much lustre upon his heroic efforts to unselfishly serve the interests of the dear public.

To all statements that the exclusive use of the vernacular would result in disaster he turned a deaf ear. He was shown a long list of drugs, the names of which were used synonymously for widely different substances, and informed that the very fact of Latin being a dead language, and thus not subject to change, and that it was understood in all civilized countries, being the universal language of science, were strong reasons for retaining its use; and all of the well-known arguments were in turn used unavailingly upon him, until at last it was pointed out, that if physicians' prescriptions were hereafter to be written exclusively in English, and if the prescriptions must be transferred to the label, so that every patient could see

exactly what he was taking, that the act, in strict justice, would also compel the printing of the *exact constituents of every patent medicine, upon their labels;* for, if it is necessary for the public protection to have the ingredients of a prescription which has been ordered by a responsible physician, to serve a special purpose, written on the label, of how much more importance does it become, to have the constituents of a secret, so-called, remedy, which is *taken by the patient without skilled advice, placed where the patient can read as he runs*, and when it was also pointed out that this would probably reduce the patent medicine business to bankruptcy, and largely diminish the advertising patronage of the manufacturers, for his newspaper, he promptly declared the act that he had so vigorously defended previously, unwise and probably unconstitutional.

Since the occurrence of the incident above mentioned, there have been several spasmodic attempts at legislation in favor of abandoning Latin in prescriptions, the last effort that the writer is acquainted with being that attempted during this last winter, in the State of Texas.

With the view of illustrating some of the dangers and annoyances that would arise, in case legislation should ever be effected, the following list of substances used under different names in different parts of the country is submitted:

Alum Root may be either Heuchera Americana or Geranium Maculatum.
American Sanicle may be either Heuchera Americana or Sanicula Marilandica.
American Valerian may be either Cypripedium pubescens or Polemonium reptans.
Ash, Prickly may be either Xanthoxylum fraxineum or Aralia spinosa.
Balm, Sweet may be either Melissa officinalis or Dracocephalum canariense.
Balsam, Sweet may be either Gnaphalium polycephalum or Impatiens balsamina.
Bay Tree may be either Myrica cerifera or Laurus nobilis.
Bears Foot may be either Dracontium fœtidum or Helleborus fœtidus.
Beech Drop may be either Orobanche Virginiana or Epiphegus Americanus.
Bird's Nest may be either Daucus carota or Monotropa uniflora.
Bitter Clover may be either Sabbatia angularis or Centaurea Americana.
Bitter Wood may be either Simaruba excelsa or Quassia excelsa.
Black Cohosh may be either Cimicifuga racemosa or Macrotys racemosa.
Blazing Star may be either Aletris farinosa or Helonias dioica or Liatris squarrosa.
Blue Cohosh may be either Caulophyllum thalictroides or Leontice thalictroides.
Bowmans Root may be either Gillenia trifoliata or Euphorbia corollata or Leptandria Virginica.
Bugle Weed may be either Lycopus Virginicus or Lobelia inflata.
Bugloss may be either Anchusa tinctoria or Borago officinalis.
Button Snakeroot may be either Liatris spicata or Eryngium aquaticum.
Cancer Root may be either Epiphegus Americanus or Orobanche Virginiana. Phytolacca decandra.
Catch Fly may be either Apocynum androsaemifolium or Silene Virginica.
Checker Berry may be either Gaultheria procumbens or Mitchella repens.
Clover, King's may be either Melissa officinalis or Melilotus alba.
Colic Root may be either Dioscorea villosa or Asclepias tuberosa, or Aletris farinosa, or Helonias dioica, or Liatris spicata.
Collard may be either Dracontium fœtidum or Symplocarpus fœtidus.
Coltsfoot may be either Tussilago farfara or Asarum canadense.
Corn Snakeroot may be either Eryngium aquaticum or Liatris spicata.
Cure-all may be either Geum Virginianum or Melissa officinalis.
Eye Bright may be either Lobelia inflata or Euphorbia ipecacuanha.
Five Fingers may be either Potentilla canadensis or Panax quinquefolia.
Golden Seal may be either Hydrastis canadensis or Frasera verticillata.
Gravel Plant may be either Epigaea repens or Galium aparine.
Hardhack may be either Spiraea tomentosa or Collinsonia canadensis.
Heal-all may be either Collinsonia canadensis or Prunella Pennsylvanica.
Horse Weed may be either Collinsonia canadensis or Erigeron canadensis.
Indian Hemp may be either Apocynum cannabinum or Cannabis indica, or Asclepias incarnata.
Indian Lettuce may be either Frasera walteri or Cocculus palmatus.
Indian Paint may be either Sanguinaria canadensis or Hydrastis canadensis.
Ipecacuanha may be either Cephælis ipecacuanha or Podophyllum peltatum.
Itch Weed may be either Veratrum viride, or Helleborus Americana, or Verbascum thapsus, or Symplocarpus fœtidus.
Jacob's Ladder may be either Smilax peduncularis or Polemonium reptans, or Pulmonaria officinalis.
Lady's Slipper may be either Cypripedium pubescens or Impatiens balsamina, or Variolaria faginica, or Valeriana officinalis.
Lungwort may be either Pulmonaria officinalis or Variolaria faginica.
Masterwort may be either Angelica atropurpureus or Imperetoria ostruthium.
Matico may be either Piper angustifolium or Artanthe elongata.
Milk Weed may be either Asclepias tuberosa, Apocynum androsæmifolium, or Euphorbia corollata.
Monkshood may be either Aconitum napellus or Leontodon taraxacum.
Partridge Berry may be either Gaultheria procumbens or Momordica balsamina.
Pellitory may be either Anacyclus pyrethrum or Xanthoxylum fraxineum.
Prickly Ash may be either Xanthoxylum fraxineum or Aralia spinosa.
Rattle Root may be either Macrotys racemosa, or Cimicifuga racemosa, or Cicuta virosa.
Rattlesnake Root may be either Goodyara pubescens, Nabulus alba, Cimicifuga racemosa, or Polygala senega.
Snake Root may be either Cimicifuga racemosa, Aristolochia serpentaria, Eryngium aquaticum, Liatris spicata, Asarum canadensis, Polygala senega or Eupatorium aromaticum.
Spice Berry may be either Gaultheria procumbens or Laurus benzoin.
Squaw Root may be either Orobanche uniflora, Caulo-

phyllum thalictroides, Cimicifuga racemosa or Macrotys racemosa.
Squaw Weed may be either Senecio obovatus or Erigeron purpureum.
Tetterwort may be either Chelidonium majus or Sanguinaria canadensis.
Turmeric may be either Curcuma longa or Hydrastis canadensis.
Water Hemlock may be either Conium maculatum or Cicuta virosa, œnanthe phellandrium.
Wild Turnip may be either Arumtriphyllum or Asarum canadense.
Yellow Root may be either Hydrastis Canadensis, Coptis trifolia or Xanthorrhiza apiifolia.
Yellow Wood may be either Xanthoxylum fraxineum or Aralia spinosa.

Recently, Prof. E. M. Holmes, Curator of the Pharmaceutical Society of Great Britain, has collected some facts in connection with this subject. A few instances will suffice to show that the same English name is applied to different drugs, and to those having widely different properties. The educated English pharmacist would supply for mandrake root, that form *Mandragora officinalis*, the consumer of herbs would expect to get the root of *Podophyllum peltatum*, whilst the culler of simples understands mandrake root to be the root of *Byronia dioica*.

Again, chamomile, to the English buyer, means Anthemia nobilis, to the German, Matricaria chamomilla.

The difference in names of English and American plants is shown in the following list:

| ENGLISH PLANTS. | AMERICAN PLANTS. |
|---|---|
| Adder's tongue. | Adder's tongue. |
| Ophioglossum vulgatum. | Erythronium Americanum. |
| Black alder bark. | Black alder bark. |
| Rhammus frangula. | Prinos verticillatus. |
| Avens. | Avens. |
| Geum urbanum. | Geum rivale. |
| Bear's f ot. | Bear's foot. |
| Helliborus virides. | Polymnia Uvedalia. |
| Birch. | Birch (or sweet birch). |
| Betula glutinosa. | Betula lenta. |
| Bittersweet. | (False) Bittersweet. |
| Solanum Dulcamara. | Celastrus scandens. |
| Blackberry. | Blackberry. |
| Rubus fruticosus. | Rubus villosus. |
| Celandine (greater). | Celandine (wild). |
| Chelidonium majus. | Impatiens pallida. |
| Centaury. | Centaury (American). |
| Erythrœa Centaurium. | Sabbatia angularis. |
| Clover. | Clover (sweet). |
| Trifolium pratense. | Melilotus officinalis. |
| White Clover. | White clover. |
| Trifolium repens. | Melilotus alba. |
| Cranesbill. | Cranesbill. |
| Erodium cicutarium. | Geranium maculatum. |
| Dwarf elder. | Dwarf elder. |
| Sambucus Ebulus. | Aralia hispida. |
| Fleabane. | Fleabane. |
| Pulicaria dysenterica, etc. | Erigeron canadense. |
| Hemlock. | Hemlock (Spruce) |
| Conium maculatum. | Abies canadensis. |
| Yellow jessamine. | Yellow jessamine. |
| Jasminum fruticosum. | Gelsemium nitidum. |
| Liverwort. | Liverwort. |
| Marchantia polymorpha. | Hepatica triloba. |
| Maidenhair. | Maidenhair (Canadian). |
| Adiantum Capillus-veneris. | Adiantum pedatum. |
| Mandrake. | Mandrake (American). |
| Bryonia dioica. | Podophyllum peltatum. |
| Pennyroyal, | Pennyroyal (Amer.). |
| Mentha Pulegium. | Hedeoma pulegioides. |
| Ivy. | Ivy (Amer.). |
| Hedera Helix. | Ampelopsis quinquefolia. |
| Pulsatilla. | Pulsatilla. |
| Anemone Pulsatilla. | A. patens, var. Nuttalliana. |
| Queen of the meadow. | Queen of the meadow. |
| Spirœa Ulmaria. | Eupatorium purpureum. |
| Ragweed. | Ragweed. |
| Senecio Jacobœa. | Ambrosia elatior. |

| ENGLISH PLANTS. | AMERICAN PLANTS. |
|---|---|
| Raspberry. | Raspberry. |
| Rubus Idœus. | Rubus strigosus. |
| Scullcap. | Scullcap. |
| Scutellaria galericulata. | Scutellaria lateriflora. |
| Sloe. | Sloe. |
| Prunus communis. | Viburnum prunifolium. |
| Valerian. | Valerian (Amer.). |
| Valeriana officinalis. | Cypripedium pubescens, etc. |
| Vervain. | Vervain. |
| Verbena officinalis. | Verbena hastata. |
| Water lily (white). | Pond lily (White). |
| Nymphœa alba. | Nymphœa odorata. |
| Water lily (yellow). | Pond lily (yellow). |
| Nuphar lutea. | Nuphar advena. |
| Water pepper. | Water pepper. |
| Polygonum Hydropiper. | Polygonum punctatum. |
| Wintergreen. | Wintergreen. |
| Pyrola rotundifolia, etc. | Gaultheria procumbens. |

The above illustrations will probably be sufficient to illustrate the danger of resorting to English or proper names for prescriptions, although the comments on the ludicrous mistakes that often occur from the use of medicines and pharmaceutical preparations could be extended far beyond the limit of this paper.

*Per contra*, it may suffice to place on record the effort of a physician who succeeded in Latinizing a very familiar name, as follows:

℞. Equinæherpesamarac, oj.
Take a tablespoonful three times a day. X.

The translation is, Hos(s)tetter's Bitters.

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## THE PRESENT STATUS OF MATERIA MEDICA AND TERAPEUTICS

*Read before the Section of Materia Medica and Pharmacy at the Forty-second Annual Meeting of the American Medical Association, at Washington, D. C., May, 1891.*

BY J. W. C. CUDDY, A.M., M.D.,
PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, BALTIMORE UNIVERSITY SCHOOL OF MEDICINE, BALTIMORE, MD.

Materia Medica and Therapeutics at present occupy an important place on the broad plane of medical science. The recent rapid growth of this department of our loved profession has been in such marked contrast with its slow development in the earlier ages that it really now excites wonder and admiration. New medicines, and new uses therefor are so prominent and so varied that it is with the greatest difficulty that any active practitioner of medicine can keep pace with them. Some of them, it is true, come up meteor-like and have but an ephemeral existence, but fortunately, many others, culled with greatest care, and evolved from the greatest scientific minds, have come to stay, and shine out as fixed stars upon the medical sky. In fact, they have now assumed such an important status that a resumé of their later growth and recent developments will certainly not be out of place in this new and important Section.

Looking back into the primary stages of medical history, and seeing the few and crude articles for internal medication upon which practitioners then depended, and then turning to the crowded shelves of our drug stores, filled with the finest preparations from our grand laborato-

ries, we can well see the advantage which we physicians now have over our fathers in the science, and congratulate ourselves that we live in so enlightened an age, and one of such great usefulness to those who require our services.

In those early days the number of drugs used were comparatively few, and their therapeutics but little understood. A few barks, a few leaves and a small number of minerals made up the medical armamentarium for the physician, while now the constituents of all the elements are at our disposal,—earth, air, and sea yielding up their richest products, which, through chemical and pharmaceutical manipulation, have become valued agents for the relief and cure of disease. Then materia medica was but a small department of our science. In the earlier schools it was included in the chair of Practice, and although considered an important part of the studies, it was small in comparison with others which went to make up the whole. Therapeutics was but little known, and empiricism held its sway. Thus for ages this department slumbered, until with the growth of years came the increase of medical lore. In these latter days separate and distinct chairs are established for its thorough instruction; colleges for its study alone are erected; societies are formed solely for its advancement; and magazines of the highest order are devoted entirely to its elucidation. Many of the brightest minds of this and other countries, such as Wood, Bartholow, Ringer, Biddle, Potter and others equally as eminent, have been placed at the shrine of materia medica, and we thank them for their devotion. And even this grand and honored American Medical Association has recently so far advanced in wisdom, as to form a separate Section "to especially consider the very important branches of Materia Medica and Pharmacy."

It is strange, and, in fact, we are lost in wonder, when we contemplate how little was primarily known of medicinal agents. From almost the beginning of the world, diseases and injuries existed and were known, and yet medical substances were scarcely considered. Surgery seemed then to attract greater attention, and external applications were in more general use. Starting at the onset of its history, but little is known regarding it, except the traditional accounts of the lotions and salves which were used for the healing of the warrior's wounds. But really how could material substances be known as medicinal or curative agents, when therapeutics was an unknown and untried field? Superstition held sway all through the earlier ages, even until within a few centuries of the Christian era, when through the mighty efforts of the great philosopher of Cos, the father of medicine, there was made great advancement in the science. And yet, he, Hippocrates, knew naught of the difference between arteries, veins and nerves, and still held to the then prevalent belief that there was a spiritual restoring essence or principle within the individual himself. Within the next five hundred years Galenical ideas were superadded to the Hippocratic, and with the knowledge then of the existence of blood, and its derangements, alteratives, or blood remedies became known. From that time on, down through the centuries medical studies dragged slowly through the mists and doubts of the ages. And even with that important epoch so dear to the literary searcher, called the Revival of Learning, medical advancement was scarcely perceptible. It is true that medical studies formed a part of the curriculum of the great seats of learning in Rome, Salerno, Alexandria and elsewhere, but yet the practice of the profession was so obscured by the mysticisms of the priesthood, and the worse craftiness of the astute empirics, that it made no marked headway. True it is, that through botanical studies, new leaves and roots were brought into prominence, and the number and usefulness of drugs increased thereby. Pharmacy was, however, but little known, and crude articles measured by the ounce, or by the handful, came as near to exactness as could be then attained. It is surely then surprising that during the Renaissance when all Europe was ablaze with literary glory—when Rome was at the zenith of her fame,—when Germany had reached the transition stage from darkness into light,—when England was alive with her brilliant literature, Shakespeare singing in poetic strains grand thoughts that will never die, the slow progress of the medical profession was so marked that it is painful to contemplate the position which it then occupied.

This illiteracy or backwardness, is evidenced by the following veritable prescription, which was written by one who had attained eminence sufficient to make him the physician to Lord Bemghley, Secretary of State to Queen Elizabeth, and for whom he wrote this prescription on the ninth day of May, in the year 1553. He described it as "a goode medicine for weakness and consumption," and is as follows:

"Take a pig of nine days olde, and slaye him, and quarter him, and put him in a skillat, with a handfull of spearmint, and a handfull of red fennel, and a handfull of liverwort, half a handfull of red neap, and handfull of clarge, and nine dates, cleaned, picked, and pared, and a handfull of great raisins, and pick out the stones, and a quarter of an ounce of mace, and two sticks of goode cinnamon, bruised in a mortar, and distill it with a soft fire, and put it in a glass, and set it in the sun nine days, and drink nine spoonfulls of it at once when you list."

Now contrast that with the position which we occupy to-day. Then huge quantities of animal

and vegetable matter was jumbled together with a "skillat" for a crucible and the sun for a chemical purifier, and after waiting for more than a week for his prescription, he was given enormous doses, or the talismanic "nine spoonfulls," at indefinite periods or "when you list." Now, through our knowledge of medical and chemical science, we are enabled to prescribe the purest alkaloid, or active principle, extracted from our most valued medicinal products, even to such infinitesimal doses, if their potency demand it, that we may order one-sixtieth of a grain, knowing that by the use of the Springer Torsion Balance scale we can be assured of exact measurements, while our therapeutical knowledge teaches us the duration of its action, and enables us to give it at exact intervals.

And now glancing hurriedly over the intervening period between that to which we have alluded and the present century, we can see really but very little of practical work either in medicines or their methods of administration. We very well know that later medical history is full of names, which, viewed from our distant standpoint, seem like towers of strength. Harvey, Sydenham, Locke, Boerhaave, VonHaller, Cullen, and a host of others cast their shadows down along the ages, but the present power of medicine, and the high status which it has now attained is due almost solely to the enlightenment of this age, and the unceasing labor of the men of our day and generation. By careful and unceasing experiments in materia medica and pharmacy, we have had brought to us hundreds of medicines, with myriads of combinations, and which advanced therapeutics have taught us, have undoubted affinity for individual organs and tissues of the body. Not only do we have medicines which will go directly to, and have their effect upon, the chief organs of the system, such as the liver, the lungs, the heart, the kidneys, and so forth, but patient and careful work has given us remedies which we know act directly upon the cell structure and individual constituents of those organs.

Just as true as we can peer down into the cavernous realms of the brain and with microscopic aid, see its mysterious structure, so true does materia medica hold within her grasp some medicine which will stir a diseased portion into normal working, or calm some excited fibre down to sweetest repose. Just as true as anatomists and physiologists have shown us the minute structure and intricate workings of the kidney, so true has pharmacy prepared for us some medicinal agent which will at once overcome its deflexion from its normal course. And just as true as chemistry has given us the constituents of the great life fluid, so true has Nature, from her boundless resources, poured out the remedy which will enrich her impoverished corpuscles, and restore them to their natural number and activity, enabling them to carry sustenance to the body and save a human life.

These problems have been worked out within the memory of some one who hears me to-day. Much of it, and by far the most important, has been developed, Mr. President, during the short period of your own professional observation and labor. And although but half a century of years has yet been allotted to the writer of this article, during my lifetime, among the many valuable additions to our department of the science, anæsthetics have been brought into existence; two of the grandest medicines known as cardiants have been discovered; and that grand body of new medicines classed among the antipyretics and hypnotics have made their appearance, and proved their usefulness.

In commending these remedies, I wish to say a few words in reference to the *safety* or the *danger* of chloroform, a subject which has been argued pro and con by every surgeon of note, by all the text books of the land, by every medical journal in every country, and especially by every layman and every country newspaper which supplies a reading public of an area of half a dozen square miles. That its danger has been greatly exaggerated by some of these, and its greater usefulness thereby impeded, I think there can be no doubt. With proper subjects and in careful hands I cannot help but believe that the danger from this well-known anæsthetic is comparatively slight. Its exact percentage of fatal results can probably never be really ascertained, for every death accompanying its use is at once reported and heralded everywhere, while there are unnumbered thousands of cases where it is successfully used, and the knowledge of it never known outside of the humble domicile where it saved some useful life. What is more cheering than the grand results achieved by some of the leading operators of this and other lands? The world-renowned Nussbaum, of Munich, says that he has used it in 40,000 cases and not a death occurred in all that vast number. Dr. Hunter McGuire, the eminent surgeon of Virginia, reports 28,000 administrations, without a single death. Prof. Chisholm, the well-known occulist of my own city, informs me that he has used it in over 15,000 cases, in both military and civil practice, without one unfavorable termination. In my own experience of twenty-eight years of active practice, a part of which was spent in military life, where administrations of chloroform were of almost daily occurrence, I have never yet seen a fatal result, and have seen but two cases where even any alarming symptoms were manifested. Therefore, so valuable an agent as this should not be thrust aside because at some time it has been used without satisfactory results. Deaths have resulted from the powerful aconite,

the gentle opiate and the glistening steel, but we do not condemn them and cease their use. Then let us continue the use of this agent whenever demanded, but always judiciously and cautiously, for if by its administration we can avert a fatal shock to some maimed and unfortunate fellow-citizen; if through its soothing power we can check the deadly spasm in some sweet babe; if by its timely and proper use we may assuage the indescribable pains of some female as she emerges from the dread agony of labor into the sweet joys of maternity; or if to any poor sufferer with his years of pain we may give one moment of relief, we will not have used it in vain.

The two great cardiants,—one a depressant, and the other a stimulant,—to which I alluded, are veratrum and strophanthus. I speak especially concerning the first named because a celebrated writer, in his much-lauded text book, says that "veratrum viride is now very little used, hence it is probable that the accounts of its usefulness were very much overdrawn." Now this is not in accord with my judgment and experience. My faith in veratrum has borne the test of twenty-five years, and so thoroughly am I imbued with the idea of its usefulness as a cardiac depressant, that in diseases which call for that class of medicines, I regard it as my sheet anchor. In pneumonia and pleurisy it is the one bright star in the firmament of medicine; and if we are to judge the successes of the future by those of the past, it will live as long as diseases will continue to exist and medicines continue to be demanded.

Regarding strophanthus, while its action upon the system is so nearly identical with digitalis, it is more speedy in its action, and more adapted to heart failure and sudden collapse. Among the scores of cases in which I have used it, I call to mind one in which dissolution seemed almost inevitable. A prominent merchant of Baltimore was so afflicted with cardiac debility that at one of my visits I found him with a pulse of 47, and his respiration reduced to 12 per minute. By a persistent use of the tincture of strophanthus he was quickly relieved, and with its continued use alone he was restored to health. His recovery is so far, at least, complete, that he contemplates a tour abroad within the next few weeks, with a journey on foot through Scotland and Ireland. Also with a lady over seventy years of age, with diabetes and heart complications, I found its effects almost marvelous. This new African product is surely a valuable addition to materia medica.

Among the newer remedies there are several whose chemical names are long and almost unpronounceable, but whose common names are already familiar to the laity, the introduction and use of which has made a bright page on the chemical, pharmaceutical, and therapeutical literature of these latter days. Their great prominence and marked usefulness have made them familiar to every one, and antipyrin, acetanilide, phenacetin, and antikamnia are articles of daily prescription by nearly every physician in the land. I must, however, from personal experience, award the meed of praise to sulphonal, that grand quieting agent, which without any appreciable bad results, will on all occasions bring about that perfect rest which every one requires; that remedy which gently soothes to sweetest slumber the almost heart-broken babe; which calms and stills to rest the tired and worried brain of the ambitious merchant or professional man; and which drives away, for the time, all care and sorrow from the aged and infirm.

In conclusion, if in my research and my own personal experience, I have proved the salutary influence of some of these grand remedies, and shown the present exalted status of materia medica and therapeutics which this paper is intended to prove, or have said aught that will have a tendency to further elevate our profession, or relieve a sufferer, my purpose has been accomplished. And if, in its preparation, I have advanced a single thought which has won the commendation of some physician here, or if in its rendition I have uttered a single sentence which has fallen acceptably upon the ear of any one present, I am perfectly content.

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## THE WORKING BULLETIN SYSTEM, NATIONAL PHARMACOLOGICAL ASSOCIATION, NATIONAL LABORATORY,

### AND A PROPOSED INVESTIGATION OF THE MATERIA MEDICA OF THE WORLD UNDER THE AUSPICES OF THE GOVERNMENT OF THE UNITED STATES.

*Read in the Section of Materia Medica and Pharmacy, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.*

BY F. E. STEWART, M.D., PH. G.,
OF WILMINGTON, DEL.

Materia medica is the name given to the collection of substances used in medicine; Pharmacy is the science of preparing medicine; Therapeutics is the science of applying medicine to the curing of disease. These branches, related and mutually dependent, are classified under the general head Pharmacology, or the science of drugs.

"Science professes to teach what is already known or may be learned in the forms of exact observation, precise definition, fixed terminology, classified arrangement and rational explanation." This science, therefore, embraces in classified forms Materia Medica, or the substance employed in medicine; Pharmacy, or the preparation of medicine; and Therapeutics, or the application of medicine to the cure of disease.

Art is the application of science to practical purposes.

Physicians practice the art of therapeutics, or, in other words, put in practical application the knowledge of applying medicine. Pharmacists practice the art of pharmacy, or, in other words, put in practical application the science of preparing medicine. Both in their respective fields, therefore, are practicing arts of medical science.

Physicians and pharmacists are mutually dependent, for medicine cannot be applied until it is prepared, neither is there any use for preparing it except it may be applied.

The practice of therapeutics should be confined to those who are educated in the knowledge of disease and its treatment; and the practice of pharmacy should be limited to those educated in the nature of drugs and their preparations.

The practice of the professions of medicine and pharmacy is being diverted from its legitimate channel and is undergoing rapid absorption by commercial houses. The competition between these houses and the professions is disastrous, because, while the former is permitted to use various well-known business methods to bring themselves into contact with the public, and create a demand for their commodities, the latter, and especially the medical profession, is forbidden to take advantage of these methods. It is, therefore, a competition of capital and business ability on the one side, and on the other, the more exact methods of science in the hands of professional men whose entire service must of necessity be limited to a very different field. The trade in medicines has the most powerful of all methods at its command, viz.: advertising. The medical profession is denied this method of creating a demand. Furthermore, the advertising system is purposely misleading, and claims are made in regard to the curative nature of drugs entirely unwarranted by facts; but the medical profession, standing faithfully on the side of truth, does not possess an equal chance of financial success. Barnum has truly said that the public prefers to be humbugged, and medical humbuggery is such a money-making business in this country that the professions of medicine and pharmacy stand a poor show in competition with it.

The purpose of my paper is to consider some of the methods whereby the practice of pharmacy and medicine may be returned to their legitimate channels.

First, the commercial prestige of these so-called great patent medicine houses is due in a great measure to what is known as the Proprietary Medicine System. By this system they are enabled to create lasting and secret, or semi-secret, medical monopolies, become immensely wealthy, and exert the most powerful influence over all medical legislation. Medicinal preparations are put on the market with a large margin of profit, which enables the manufacturers to create an immense demand by misleading advertisements. As they do not fear competition, it is comparatively safe to sink a hundred thousand dollars in marketing one of these articles, for the return is a large one in the long run, and the market once gained, can be held indefinitely against all newcomers. I am aware of one instance where a medicinal preparation of the kind was placed on the market at $90 a gross, and cost only $12 a gross to manufacture it. The enormous profit of $78 a gross on a business that figured up into the millions permitted the manufacturer to expend an enormous amount of money in advertising. The original formula was that of a weak infusion, and taken from Gross's Surgery, and the article was advertised as a "Highly Concentrated Compound Fluid Extract."

The first thing to put out of the way, therefore, in adopting any method of reform, is the proprietary medicine scheme. Instead of endeavoring to do this, however, the medical profession during the last fifteen years has made the system comparatively respectable by adopting a large number of so-called copyrighted and trademarked pharmaceuticals and new chemical preparations.

The Code of Ethics of the American Medical Association clearly condemns the prescribing of medicines which are restrained from general use by any or all of these methods of monopoly. At the same time, while this is true, a large number of the members of the Association have so far forgotten their obligations that they use the articles referred to very extensively in practice. This situation of affairs is very demoralizing, both to the profession and to the public; and the prescribing of such preparations is an act of great injustice to the pharmaceutical profession of this country, because it forces the apothecary into all manner of irregularities, so-called, to obtain a livelihood.

But there are even greater reasons why the medical profession should seriously consider the present tendency of the times in this department of medicine, for the proprietary medicine system is a continual menace to medical science and practice.

In the first place, there is entirely too much misunderstanding in the minds of medical men in regard to the nature of the patent privilege. The Constitution of the United States gives Congress the power to promote progress in science and useful arts, by securing the authors and inventors, for limited times, the exclusive use of their respective writings and discoveries. On this provision of the Constitution is founded our patent and copyright laws, but not our trademark laws. A copyright secures to authors for limited times the exclusive use of their writings,

while the patent law secures to inventors for limited times the exclusive use of their inventions. The copyright and the patent are precisely the same thing, only one applies to authors, and the other to inventors.

A trade-mark, however, as applied to the arts, is merely a commercial signature to distinguish the goods manufactured by one man from those manufactured by another; in other words, it is employed to distinguish one brand from another brand of the same article of commerce. But suppose for a moment each art to be a monopoly, of what possible use would be the trade-mark? An invention of course must be provided with a name by which it may be recognized and dealt in. By the proprietary method this name is registered as a trade-mark, and a monopoly is secured perpetual in character. Rights are thus obtained of a nature far more restrictive than those permitted by the patent. Where does the authority come from which permits inventors to thus secure for an unlimited time the exclusive use of their inventions?

It certainly does not come from the patent law. A patent is a contract between the inventor and the government, representing the public at large, by the terms of which the inventor is granted the exclusive use of his invention for a limited time in exchange for the publication of a full knowledge thereof, whereby the public may manufacture the invention when the patent expires. Where does the authority come from which defeats the very end for which the patent law was devised?

At least one learned judge has said: "When an article is made that was theretofore unknown, it must be christened with a name by which it can be recognized and dealt in, and the name thus given it becomes public property, and all who deal in the article have a right to designate it by the name by which alone it is recognizable."

About a year ago I read a paper before the House Committee on Patents of the United States Congress, taking the same view of the case; and while the committee said that it could not constitute itself as an interpreter of the law, it was the sense of those present, that no such monopoly was ever contemplated by the trade-mark law. In a subsequent conversation with His Excellency, Mr. Benjamin Harrison, President of the United States, he said that the Supreme Court was the supreme interpreter of the law; and, on a point where there was so much dispute, a test case would probably have to be presented to it before the matter could be finally settled.

But a very similar point was long ago settled by the Supreme Court in relation to copyright, and I do not see why the decision does not apply with equal force to the subject under consideration. "In 1834 was contested in the Supreme Court of the United States the same question which had been so elaborately argued in the English case of Millar *vs.* Taylor, decided by the Court of King's Bench in 1769, and finally settled by the House of Lords five years later, in Donaldson *vs.* Becket, viz.: whether copyright in published works exists by the common law, and is therefore of unlimited duration, or is created by and wholly governed by statute. The Supreme Court, following the authority of the House of Lords, held that there was no copyright after publication, except for the limited time given by the statute."

It has been advocated that the same articles be introduced under new names, but this is objectionable, because the old names have already secured recognition in scientific literature to a greater or less extent; and confusion would result if such a plan is adopted. This is especially true if the suggestion once made should be put in force, whereby each manufacturer should have a trade mark name for the same article. Imagine the load of synonyms that would accumulate in a few hundred years. Furthermore, the public has a perfect right to manufacture any article that is not patented, and not until the new name thus introduced becomes equally known to the public, has another manufacturer an equal chance with the inventor to manufacture an article to which he has an equal right. Finally, there is a right way and a wrong way for the medical profession to look at this question of trade mark names which is so seriously injuring medical nomenclature. For the profession to adopt the wrong way, or dodge the issue, is not only to show cowardice, but to tacitly endorse or sanction the unscientific scheme of the proprietary trade.

Next, I wish to present to your consideration this point: While there may not be any apparent difference between the practice of a professional man and a tradesman, the true difference is plain enough when motives are considered. A tradesman practices his vocation for the sole purpose of making money. If he takes any interest whatever in scientific matters, or in the good of his fellow-tradesman, this is incidental. A professional man, on the contrary, is actuated by a very different motive. He practices his vocation to benefit science, elevate his profession, and serve the cause of suffering humanity; and money making is incidental. It is the faith of the public in the altruistic nature of medical practice that gives confidence under the many trying circumstances attending sickness and death. What person would call in a physician whose reputation was that of one who practices medicine with the primary object of money making? Such a man's services would be rendered in proportion to the pay. The poor have just as good right to the very best services of the best physicians as

the rich, and this principle is recognized everywhere.

Again, the standing of a commercial house is founded upon its business prestige; but the standing of a physician is founded upon the value of his services to medical science, to his profession, and to the cause of suffering humanity.

Now I claim that pharmacy, being a branch of medical science and art, should be practiced as a profession, not as a trade; and the standing of a pharmacist should be founded, not on his commercial success, but on his contributions to medical science, and the value of his services to the profession and to the public.

If the line were drawn by the medical profession between pharmacy as a profession and pharmacy as a trade, there are plenty who would step over this line to the side of scientific medicine; and the class of pharmacists and manufacturing houses thus created could be trusted to take care of the scientific and professional interests of this important department of medicine.

For more than ten years I have been preaching this doctrine with more or less success. On the side of professional and scientific pharmacy it gives me great pleasure to see such pharmacists as Hynson and Wescott, of Baltimore, Frank Morgan of Philadelphia, and such manufacturing houses as Parke, Davis & Co., of Detroit, and Dr. E. R. Squibb, of Brooklyn, and such wholesale drug concerns as Gilpin, Langdon & Co., of Baltimore, and several others. This is very encouraging, but it is discouraging to meet with such experiences as the following:

Some time ago I had a talk on the subject of pharmacy with a well known college president, Prof. M.D., and L.L.D., who said he considered that the pharmacists occupied the same position to him as his cook; and he did not care what either of them did so long as one furnished him with properly cooked food, and the other one with properly prepared drugs.

Again, a large pharmaceutical house, acting with a purely professional and scientific motive, spent years of costly endeavor in the investigation of standards for vegetable drugs and galenical preparations. As the result of these investigations it introduced a class of standardized preparations known as "Normal Liquids," and gave the entire work to science by presenting it to the committee for revising the United States Pharmacopœia. By so doing it practiced pharmacy as a profession; and deserves just as much professional and scientific credit and recognition as any physician in the land. And yet it has been openly advocated that while the work itself is of the greatest value to science, and to the profession, and should therefore be accepted because greatly needed, the name normal liquids should not be adopted because it would give this house great commercial prestige. As well might you say to Dr. Koch, "Your work on the subject of bacteria as a cause of disease is excellent, and should be accepted, because of great benefit to science and the cause of suffering humanity; but while we accept your publications they must be contributed in an anonymous manner, because if any body should happen to find out the author of such valuable work it might give you great prestige as a practicing physician."

Finally, the question of standardizing medicines is one that merits consideration. "As laws are at present constituted a poison can be legally sold as such in most States only with a flaring label of warning, and after double or triple forms of registration by a competent pharmacist. Put it up as a patent medicine, decorated with a seductive title, and a rainbow wrapper, and at once it is beyond the restraints of regulation, and may be sold by street-hawkers, slaughter shops, anybody and everybody, without let or hinderance." Where is the consistency that discriminates by such strange partiality in favor of charlatanism, and does such injustice to intelligent pharmacists. I am informed that in France, the law is so strict that no one except regular physicians and first class pharmacists are allowed to put up medicines and sell them to the public. Laws should also be passed in this country restraining anyone from manufacturing and selling medicinal preparations without being properly qualified by education and experience.

Again, I am told that in France before anyone is allowed to market an article he is asked by the government for a copy of his formula and a sample of his preparation. Both are handed to a government analyst who makes a careful analysis of the article, and if it proves in any way below the standard prescribed in the formula it is suppressed. If it passes this examination it is directed by the Academy to be used in hospitals where patients suffering from the peculiar disease for which it is recommended are received; and there it is thoroughly tested for several weeks and the effects duly noted. If it proves effective then its compounder is allowed to manufacture and sell it, after the formula has been duly published in some standard work.

I have already referred to the interesting question now exciting so much interest in medical circles, viz., the standardization of vegetable drugs and galenical preparations. This is an excellent move so far as it goes, and I believe with my esteemed friend, Prof. Remington, that every important drug and important preparation should be standardized whenever a process can be devised which is practical, readily applied, and which is applicable to the needs of the pharmaceutical and medical professions as a whole. But I go still further than this and insist that every medicinal preparation introduced to the public should have some recognized standard, and the manufacture should

be held up to that standard by imposing severe penalties for adulteration. A national law to prevent the transit of adulterated products from one State to another, and State laws to control the manufactures in each State would probably be necessary.

To sum up the entire matter, therefore, I again assert that the manufacture and sale of medicine and the treatment of the sick is being diverted from its legitimate channel, which consists of the physician's prescription compounded by the educated apothecary, and directed into the hands of uneducated merchants ignorant alike of disease or its treatment. Both physicians and pharmacists are suffering much through this unfair competition, and many of the irregularities in the relations between the two professions can be traced to this cause. Science is hindered and scientific nomenclature seriously threatened; much of modern pharmacy has no place in literature whatever, and partial information only can be found in the advertising pages of medical and pharmaceutical periodicals which are destroyed at the end of the year. Pharmacopœias and text-books, dependent as they are upon this knowledge, are suffering the consequence; while students in our medical and pharmaceutical colleges cannot be instructed in the composition and use of many articles which they will afterwards use in their practice; physicians hesitate about writing articles concerning preparations employed by them in treating the sick, for fear they will be charged with dishonorable motives; journals object to receiving such reports, either because they are afraid that readers will think admittance to their columns has been gained through bribery, or because they prefer that all such mention shall go through their advertising columns and be well paid for. And finally, there is no protection to the public in this connection by either the medical, secular, or religious press; for the entire press of the country is so thoroughly subsidized by advertisers that there are but few publications sufficiently independent to say anything on a subject which may injure their advertising patronage. Taking all of these facts into consideration, is there not sufficient reason for alarm?

How then can this great evil be remedied? My suggestions are as follows:

1. I would suggest that an association be formed with a membership of both physicians and pharmacists to be known as the American Pharmacological Association.

2. For the purpose of ascertaining the true value of drugs and compounds now in use, as well as all new introductions in the future, I would suggest that a national laboratory be established to test drugs and medicinal preparations from all points of view, and that this laboratory be manned by physicians and chemists selected from the medical department of the Army, Navy, and Marine Hospital Service.

3. I would suggest that this national society, with the aid of the laboratory referred to, take up an investigation of the materia medica of the world to ascertain what substances are used by various nations as medicine—this to include both civilized and savage people. Such an investigation would be of immense profit not only to medical science, but such sciences as botany, anthropology, etc., etc., and could be carried out without great expense by the medical men in the employ of the government, who now have very little to do.

4. I would suggest the adoption of some such plan as that in use by France, whereby the manufacture and sale of drugs and medicinal preparations shall be limited to those qualified by education and training for this responsible vocation; that nothing shall be introduced as a medicine unless first submitted to the national laboratory and tested, first on animals if possible, and then by the hospital service throughout the country, after the true formula has been published, and the claims made by the introducer shall have been properly authenticated. It is better to experiment with patients in the hospital under proper restrictions than to leave things as they are at present, for the patent medicine trade are now experimenting on the public at large without any restrictions whatever. To carry on this work, "Working Bulletin," containing all obtainable information concerning the drug or preparation, should be extensively circulated to physicians connected with the hospitals throughout the country. And a monthly journal should be published as the organ of the National Pharmacological Society. Scientific expeditions should be sent out to explore uninvestigated parts of the world, hoping to discover valuable medicinal plants. Botanical gardens should be erected in connection with the work to further knowledge of the cultivation of medicinal plants.

5. Finally, I would insist that a patent should never be allowed for a medicine unless it be first proved to be a new and useful invention as a therapeutic agent by the tests that I have indicated. And then, if it be deemed wise on the part of the Government to grant a medical inventor the exclusive use of his invention for a limited time, I don't know as there is any objection to it.

This plan which I have suggested for investigating the materia medica of the world, is not so visionary as it might appear without due consideration. The working bulletin system, the hospital plan, the monthly journal as an organ of the work, the scientific investigation of the materia medica of various unexplored regions such as the valley of the Amazon, the interior of the Fiji Islands, and the Islands of Jamaica, are things that already exist, and have been carried out; and the journal I refer too, the *Therapeutic Ga-*

*zette*, is universally acknowledged by all authorities both in this country and in Europe to be the leading journal in therapeutics in the English language. So far as the working bulletin system is concerned, if the profession would do its share the bulletin would become far more valuable than they are at present, though they receive compliments from every quarter. If so much can be accomplished as has already been done by the enterprise and liberality of a private corporation, Messrs. Parke, Davis & Co., of Detroit, how much more might be accomplished if it was taken up with all the resources of the United States Government. Under proper governmental auspices the work would be raised to a level where it would be no longer hindered by the attacks of business competitors, who do not hesitate to ascribe the most selfish motives to every move that has been made. And it would be no longer crippled by the constant attacks of the proprietary medicine trade who greatly fear any plan calculated to destroy their monopolies and prick their bubbles.

The following comments, received from well known authorities, well illustrate the favor with which the plans suggested in this paper have been received.

Prof. Spencer F. Baird, Secretary of the Smithsonian Institution, when I submitted the plan to him originally, said that I might tell my friends that in his opinion it was one of the most important plans ever submitted to the Institution.

Prof. H. G. Beyer, Curator of the National Museum, in a letter written October 20th, 1885, says: "I most sincerely sympathize with you in your plans of trying to organize the association you speak of, and you may depend on my hearty coöperation in the matter, so far as I am able to assist you. I think your conception of establishing a Bureau of Department of Pharmacology under the Government a grand one, and no doubt one that ought to be carried out. We have here all sorts of scientific Bureaus, and it seems to me not one which is calculated to be of such immediate benefit to mankind as a Department of Pharmacology would be to the American people, not to speak of the immense scientific value it would be to medicine and pharmacy. I, for one, should certainly hail the inauguration of such an institution with great delight. It is exactly what I have been having in mind for the last year and a half."

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THE eighth annual meeting of the New York State Medical Association will be held Wednesday, Thursday and Friday, October 28, 29 and 30, 1891, at the Mott Memorial Hall, 64 Madison avenue, near Twenty-seventh street, New York City. Sixty papers appear on the programme.

## THE FUTURE CHEMIST.

*Read in the Section of Materia Medica and Pharmacy, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.*

BY CHAS. T. P. FENNEL, M.D.,
OF CINCINNATI, O.

When I was invited to undertake the honorable task of presenting a paper on this memorable occasion, the beginning of a new era for physicians and pharmacists, I felt a hesitancy in accepting, being cognizant of my unfitness to select and consider a subject worthy of, and of equal importance to, both professions.

The beginning of a new era! American medicine has extended her arms and taken unto herself American pharmacy. The vocabulary of the English language is inadequate to express the gratitude due to the American Medical Association. Henceforth, the two professions go hand in hand; and if we are only content to await the harvest of the seed that has been sown, our granaries will, in good time, be filled with golden grain.

All nations reverence antiquity. Historians have ever been ambitious of tracing back their subjects to the most remote antiquity. Writers on medicine and allied sciences have not manifested less eagerness to discover the origin of their art, but in every attempt to thread the stream to its source, were soon lost in the wilds of conjecture or the regions of fable; indeed, it is very unlikely that we should be able, by the most indefatigable research, to approach the period when remedies were first applied for the alleviation of bodily suffering, or to discover any country, no matter what its state of civilization might be, in which its native inhabitants were destitute of medical resources. Looking back to my early days, when I learned the rudiments of practical chemistry in the laboratory of a pharmacist, I can fully realize and appreciate the gradual but wonderful advancement made in the last twenty-five years.

Retrospection and introspection. What lessons of practical wisdom do they unfold? What reminiscences may they call forth, and what beacons for future guidance reveal? Epochs in the life of man, when he feels how little he knows, and how much of Nature's secrets are still to be unraveled.

The close of every decennial marks an epoch in the history of American pharmacy, and it is well to look backward for a moment upon the past, and see what has been accomplished for the betterment of American pharmacy.

In the progress of civilization, pharmacy has kept abreast of the other natural sciences, which is substantiated by the improvement in each succeeding pharmacopœia. American pharmacy has completed another period of time in its history. A new pharmacopœia will be upon us before long,

and, judging from the preliminary labors, will be a credit to American science.

Comparison alone will forcibly impress one with the absurdity of some, and the total inactivity of many preparations.

Impelled by curiosity and a desire for information, one seeks to inquire for the reason why some substances, held at one period in the highest esteem, should have fallen into total neglect; why others, of apparent insignificance, should have held their position so steadily, and again, why others which have been denounced as inert and worthless, should have been raised into special favor once more.

Superstition and speculation have been laid aside for fact and demonstration. Medicine and pharmacy are no longer in the category of a craft or a delusion, but sciences established upon solid and definite bases.

The advances made in the science of medicine are, in a great measure, due to the discoveries in chemistry by the early pharmacists, and who, in reality, are the founders of modern chemistry. In tracing the history of chemistry, not in the sense of the science of to-day, from its earliest period, we find that its progress to its present advanced state has been exceedingly slow. Chemistry is virtually as old as the history of mankind —a rash assertion, perhaps, but one which may be defended by the statement that vinegar is mentioned in the Old Testament, and is in all probability the oldest acid known.

To prolong life was a problem that engaged the attention of mankind from the earliest ages. It was not until the rise of alchemy, however, that the search of an elixir vitæ as a scientific possibility engaged thinking men. The science of alchemy can be traced back to the third century, though efforts have been made to trace the origin, by tradition, to Egypt. Geber and the great physicians of Arabia were the representatives of alchemy; the time constituting the second period of the history of chemistry.

The next period is known as the time of medical chemistry.

The results obtained were the work of physicians, among whom Paracelsus stands preëminent. All the investigations were made in reference to the healthy and diseased condition of the human body, and the consideration of remedies that would restore the equilibrium displaced by disease. There was a long time between Geber, Paracelsus and Priestly. The birth of modern chemistry is accredited to the eighteenth century, Priestly and Lavoisier dealing the death-blow to alchemy and iatro chemistry. During these periods of time, more or less attentive observations had been made on the properties of natural bodies, various theories had been formed, and different ideas had been entertained concerning the nature of those bodies. The greater proportion of these were vague and unwarrantable, and in many instances positively absurd.

The fate of these cautioned the judicious part of the inquisitive world of the necessity of substituting experiment and strict mathematical reasoning for the suggestions of the imagination.

This rational reform, which commenced with the seventeenth century, was productive of a vast number of useful discoveries.

We may well quote Sylvester Baxter: "As in a journey from one climatic zone to another, we have been slowly leading up to new conditions; but the changes, like the movements of a clock's hour hand, are so gradual as to be scarcely perceptible. Suddenly we are aware that circumstances have become quite differemt from those we remember well back in our way."

Medicine, chemistry and pharmacy are not independent sciences, but dependent upon each other. Every particle of matter in the cosmos bears some sort of relation to every other particle of matter in the cosmos. The advances made in one direction, will naturally be available for further progress in another direction.

Scheele, the Swedish chemist, enriched the science with many discoveries, and contributed much to the progress of practical chemistry.

These discoveries gave new impulse to the study of medicine. In fact, no progress could have been made in medicine without the key of Priestly's "Oxygen," unlocking the secrets of nature.

The advancement of medicine, more so than that of chemistry and pharmacy, has been continually arrested, and often entirely subverted, by the caprices, prejudices, superstitions and knavery of mankind.

American medicine and pharmacy are, to some extent, still the sufferers from the same causes. But we are leaving the oft trodden path of history, and must go back in time to secure the evidences which make the sciences of to-day. Apparently as marvelous as the discovery of the elixir vitæ or the philosopher's stone, were the discoveries by Sir Isaac Newton in 1675. Amongst all the discoveries of modern science, none has deservedly attracted more attention than the results of the application of spectrum analysis to chemistry.

What have not the discoveries of Newton done for medicine?

The application of the principles involved in his discoveries increased the technique of the microscope. Leeuwenhoek may justly be called the father of scientific microscopy, and as having set a most admirable example of scientific method in the prosecution of biological research. These methodical investigations, and the realization of results in the domain of the invisible world, have progressed with such wonderful rapidity as to be almost beyond belief.

We have reached the dawn of a new era in medicine and chemistry.

Observations have shown that in the decompositions of all organic matter, and in disease, microörganisms will result.

All animal and plant life consists of a mass of complex, unstable chemical substances, capable of being oxidized and reduced to simple, more stable substances, with the setting free of energy. This continual setting free of energy constitutes a drain which must be met by constantly renewed supplies, which we call food. When animal or plant life is supplied with appropriate food material, and exposed to favorable external conditions, we perceive continual changes of construction and destruction.

The processes of decomposition, by which relatively simple substances are produced from relatively complex ones, form the issue of to-day.

The most active agents in producing chemical changes are bodies which are termed "ferments," and the process fermentation and putrefaction. Originally, the term "fermentation" implied the effervescence and evolution of carbonic acid gas; but the accepted definition of to-day implies peculiar changes to which complex organic substances are liable. Putrefaction is virtually a process of fermentation, and only differentiated from it by the products of decomposition being of a disagreeable and obnoxious odor. The ferments are distinguished as organized and unorganized. But little is known of their chemical composition, and much less, in fact, nothing, is known of the properties upon which their characteristic action depends. As examples of organized ferments, we have yeast and bacteria. The former we know to be a very complex mixture of fats, cellulose, albuminoid nitrogen and salts; the salts consisting of phosphate of magnesium, potassium and calcium; but of its constitutional structure we know nothing, and much less upon what action depends.

To the casual observer the souring of wine or milk, the spoiling of all kinds of food products, might appear spontaneous, without the application of any substance from without.

The chemist is well aware that the changes are non-spontaneous, and hence must be produced by substances or reagents, although these may not enter as a factor in the mathematical chemical explanation. These are the peculiar changes to which complex organic substances are liable, and many theories have been advanced to explain these processes.

Experience and observation have proven that fermentation always takes place in the presence of water, under varying temperatures and in contact with some specific ferment. Although apparently the ferment does not contribute to the final product, its presence is essential. Berzelius called it catalytic action; that is, by contact.

Stahl claimed that the preëxisting molecular motion was disturbed by the molecules of the ferment, and caused the formation of new compounds, in which the molecular motion was equalized by the disturbing element.

Liebig claimed that the unstability of albuminoid substances in the presence of water was so great, that the least oxidation would disturb the chemical equilibrium to such an extent as to rearrange the atoms to form new compounds of greater stability.

So far, the question of process had been considered from a purely chemical standpoint.

Schwann, Cagniard and Latour examined the so-called yeast ferment under the microscope, and found cells similar in character to vegetable cells, and that these, under proper conditions, increase and multipiy.

They naturally concluded that yeast is a species of plant, and that the life of this plant produced the change.

The theory advanced was readily taken up by others, amongst whom Helmholtz, Mitscherlich, Hoffmann, Schroder and Dusch did admirable work, but not one of them made any really progressive move. It remained for Pasteur to repeat all known experiments and verify them, but his renown was established in cultivating pure growths of each species, and examining each for its chemical action.

Ferments have been classified according to the nature of the chemical changes which they induce; that is, oxidative and splitting fermentation. A few coming under the head of the latter may be produced by purely chemical means.

The conversion of cane sugar into dextrose and levulose can be accomplished by purely chemical means, by the use of strong mineral acid, especially sulphuric acid.

Organized ferments, as the yeast plant, cannot ferment cane sugar directly, while it can induce the alcoholic fermentation in the glucoses. In the fermentation of cane sugar by the yeast plant, the same splitting up of the atoms of sugar must take place as is accomplished by chemical means, in order to induce alcoholic fermentation. This process, known as the inverting of sugar, is produced by a soluble ferment which accompanies, and is probably produced by, the yeast plant itself.

Fermentation is no doubt a nutritive process for the ferment-producing organisms, with its consequences.

In like manner, the butyric fermentation follows the lactic fermentation. Changes are produced in the albuminous constituents of milk by the lactic ferment, which is conducive to the health and growth of the butyric ferment.

The proteids of milk must consist of more than the single complex substance which we call casein, for its precipitation with neutral salts, acetic

acid or coagulation, is not accompanied with uniform results. I feel satisfied that the day is not far distant when it will be shown that the so-called casein consists of a soluble and an insoluble part, possessing different properties, and exerting influences characteristic of each.

Analyses of milk, preserved and condensed by recognized authorities, are so at variance with each other, that it is impossible for the chemist to decide upon a standard.

The conversion of starch into dextrine and dextrose, milk sugar into saccharine bodies, one crystallizable, the other not; decomposition of glucosides, are all possibilities of the chemist.

The agent used to accomplish the desired result, and taking the place of the ferment, does not enter into the chemical equation, any more so than the ferment.

The fermentation produced by the unorganized ferments, diastase, emulsin, myrosin and erythrozym, cannot, by chemical means, be produced with like results.

The digestion of the food is nothing more than a physiological fermentation which food undergoes previous to its absorption.

According to Charles and Landois, the gastric fermentations of proteids end with the formation of peptones, soluble and diffusible.

The pancreatic fermentation is more complicated, the results of decomposition being peptones, leucine, tyrosin, aspartic acid and glycocoll. As a subsequent result, we find that the medium is now conducive to the growth of microörganisms, the products of their process of nutrition being indol, scatol, phenol, fatty acids, hydrogen, carbonic acid gas, dihydrogen sulphide, ammonia, and finally ptomaines.

An artificial digestion of albuminoids is partially accomplished by dilute hydrochloric acid, but the resultant product does not deport itself as a peptone. The products of pancreatic fermentation have never, so far as we have knowledge, been obtained by chemical means, although it has been found, by experiment, that artificial pancreatic digestion readily advances to the putrefactive stage, with the formation of like products.

In all the various forms of fermentation, whether by organized or unorganized ferments, the processes are in the nature of a progression, the evolution is gradual, but each stage is dependent upon the preceding one. The process may be interrupted, but it never can become retrogressive. The ferment may be constrained to live under abnormal conditions, but it soon becomes exhausted, unless revived by artificial means. Under such conditions, it is not surprising that standards may appear arbitrary and misleading.

Aside from the data furnished by chemical analysis, other factors must be introduced, the source and nature of the source, and the consideration of the influences, light, air and heat.

It is therefore necessary, to obtain conclusive results, to take cognizance of the inevitable decay, whether a process of fermentation or putrefaction, influenced by living organisms, or a chemical decomposition with the formation of compounds conducive to the growth and development of living microörganisms.

The scientific, as well as the phamaceutical chemist, can no longer stand alone, he must call to his aid the biologist; and where could he have better opportunities to find him than among the medical profession.

The results of their combined efforts will furnish indisputable facts, and be based upon biological-chemical data as solid as the rock of ages.

The American Medical Association has indeed performed a noble act, in offering the opportunity for developing a higher culture and a more comprehensive education.

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## PHARMACY FOR MEDICAL MEN.

*Read in the Section on Materia Medica and Pharmacy at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.*

BY P. W. BEDFORD, M. D.,
OF NEW YORK.

The education of the medical student of the past as well as of to-day is neglected in one of its most interesting and necessary departments, that of pharmacy. It is not necessary to ask any one of this assemblage as to the amount of actual experience he has had in the handling or manipulation of the drugs he prescribes, or whether he has ever prepared the prescriptions he directs for his patients. There are doubtless some who have had such education or experience, but they are the exceptional cases. Those that have had the previous training of the pharmacist or who may, during their student life or at some subsequent opportunity, have given attention to the subject of pharmaceutical manipulation, invariably attest its great advantage to them in their future professional success, both in the curative as well as the educational experience. It has come under my own observation in numerous instances that the student of pharmacy, who at a later period becomes a student of medicine, is apt to be a leader in the profession of the healing art.

My object in the very brief paper that I bring to your notice, is to urge that in the curriculum of the medical student there should be some place assigned for such an amount of pharmaceutical instruction as would enable him to know, by practical work as well as lectures, the things that specially interest him as a provider of the "ways and means" of restoring health to the ailing and distressed. I believe that it is conceded that even yet there are many medical grad-

uates who in their practice find it necessary to carry to their patients in remote places the remedials as well as the advice, and if this be so the medical colleges should provide methods of instruction in this department. There is not the need that either of the professions should usurp the border-land which divides the one into a class whose function is to diagnose the difficulty and devise a method of relief or cure, and the other to carry into effect the suggestion of the former observer. It is wise that each, however, should have the knowledge which goes farther than simply to have memorized facts or statements made by the professor to whom he listened, and that as "practice makes perfect," so there should be an earnest effort made to give the medical student a practical acquaintance with the drugs, chemicals and preparations he is in the future to depend on for success in his combat with disease. The department of "materia medica" should, like the title of the section under whose beneficent wing we gather today, have a permanent suffix, the additional title, "and pharmacy," or it would be still better to dignify the college as well as the position by adding to the professorial ranks a special department and a "professor of pharmacy."

The work and teachings need not be, in fact, should not be, the same as to a class of pharmacists; rather would it be a series of practical demonstrations to a class of twenty or thirty students at a time, and each be required to go through a regular graded course of practical work following the oral instruction or lecture given.

With such a brief but comprehensive plan of instruction for medical students in the future, we will have an improvement in the merit and appearance of prescriptions as they are dispensed, the products are more likely to represent the advanced knowledge of the times, and the prescriber be more in touch with the pharmacist in the needs of efficient yet reliable medication. For the practitioner of to-day we would urge that a little more thought be bestowed on the "prescription," that it be a trifle plainer in its chirography than the average sample of what the busy practitioner sends out as his request for remedials, and that the combination be so arranged that it is free from those incompatibilities which make the product one which is unsightly to the patient, striving to please the eye and palate while retaining efficiency unimpaired. The outline for such instruction which is appended to this paper is merely a suggestive one, but which may form a suitable basis to be varied as may best suit the convenience and arrangement of instructor and class. It is, however, urged that there appears to be but little work of this kind as yet attempted in medical colleges, so far as appears from their printed prospectus, and it is believed to be one of the important sections which should be impressed on the medical student.

### THE PHARMACY OF CRUDE DRUGS AND THEIR PREPARATIONS. CLASSIFICATION AS TO THEIR PHYSICAL CHARACTERISTICS, ROOTS, BARKS, LEAVES, FLOWERS, FRUIT, SEED, GUM, RESIN, GUM RESIN, OLEORESINS, BALSAMS.

Of the 261 articles from the vegetable kingdom which are official in the U. S. P., 1880, all are either under the above classification or are products of the same. For the therapeutic study of these articles as remedials they might be re-classified in appropriate tables for reference and study under the title of the remedial action they exert, as anthelmintics, antipyretics, astringents, cathartics, diuretics, nervines, etc. For their pharmaceutical consideration they may be best studied by taking the crude drugs in the order given above, noting the methods of reducing them to a condition in which they can be made serviceable for medication, as also yielding such preparations as the U. S. P. calls for as obtained from them.

This will bring in the processes of drying, contusion, grinding, sifting, preparing graded powders, and permit of showing methods of detecting adulterations and sophistications of the drugs in the whole and powdered condition.

From the drugs may be prepared at the several succeeding lessons as practice work:

Infusions: The official and other non-official.

Decoctions: Of various drugs.

Tinctures: Aconite, benzoin, kino, cinchona co., guaiac, nux vomica, opium, squill.

Syrups: Tar, wild cherry, rhubarb, squill, senega, tolu.

Fluid extracts: Gentian, ergot, cotton root, ipecac, licorice, hyoscyamus, senna.

Extracts: Indian hemp, gentian, hyoscyamus, nux vomica, opium.

Solutions: Mucilage, acacia.

Expressed oil: Cotton seed, castor oil.

Volatile oil: Clove, cubeb, cinnamon, copaiba.

Distilled waters: Water, (unofficial) from cinnamon, fennel.

Resins: Jalap, podophyllum.

Oleoresins: Cubeb, ginger.

Mixture: Ammoniac, almond, asofœtida, emulsion cod liver oil, emulsion turpentine.

Pills: Aloes, cathartic comp., rhubarb comp., nitrate silver, permanganate potassium.

Powders; Ipecac and opium, jalap compound.

Ointments: Belladonna, gall, veratrine, suppositories.

Alkaloids: Quinine, morphine.

Glucoside: Santonin, preparation of various prescriptions, incompatibilities pointed out.

Following the guide of the U. S. P., the dis-

pensatories or Remington's practice of pharmacy, this outline will bring into service nearly all the manipulations that appertain to preparing and dispensing medicines except purely chemical work, and could well utilize two hours each of fully twenty gatherings.

THE PHARMACY OF CHEMICAL PREPARATIONS.

Laboratory work should be an absolute requirement for each medical student, and the explanatory lecture of half an hour should be followed by two hours practice by the class. This course should begin with practical work in weights, measures, and specific gravity, and no one should be excused from this until he thoroughly comprehends and satisfactorily demonstrates the principles involved, both orally and practically. The relations between the Centigrade and Fahrenheit scales should be equally impressed. The effects of solvents on chemicals should be studied, then heat in its various applications, for each operation selecting some process which will make some pharmacopœial article. Evaporation of solutions furnishes the methods of crystallization, granulation and exsiccation. Sublimation will give opportunity to study the products of arsenic, mercury, sulphur, and other volatile bodies. Distillation will enable many of the acids to be produced and experimented with for identification and purity, and heat evolves most of the gaseous bodies so that they may be studied.

Precipitation is a means of producing many chemical bodies, and this process is capable of illustrating interesting facts which also apply to other branches of pharmacy than chemicals.

The arrangement of the rest of the course should be devoted to a systematic method of making the more prominent chemicals, as also analytical work to determine the presence of substances in mixtures furnished the student, so that the general course of metals, acids, inorganic and organic bodies, that belong to pharmaceutical chemistry, can be covered. The reactions of chemicals in galenical preparations as are frequently prescribed should be prominently dwelt upon during the latter part of the course. Volumetric and urine analysis will be a fitting conclusion to such a course of instruction. Such a course should cover about twenty-five lessons as a minimum.

When it is not possible to introduce such a course of practical demonstrations and work as is outlined above, then from ten to fifteen hours should be given during each session, and one hour lectures with practical illustrations. This might include weights, measures, specific gravity, subdivision of drugs, division and dispensing of powders, the preparation of pills, and the galenical preparations in briefer scope than in the former outline; demonstrations showing the incompatibilities of chemicals with each other and with galenical preparations; and special attention to such prescription work as will best accord with the teachings of the professor of materia medica and therapeutics attached to the same institution.

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## THE DRAINAGE OF CHICAGO.

*Read at the Seventeenth Annual Meeting of the Mississippi Valley Medical Association, held at St. Louis, Mo., Oct. 14-16, 1891.*

BY JOHN B. HAMILTON, M.D., LL.D.,

SURGEON, AND FORMERLY SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE OF THE UNITED STATES; PROF. OF PRINCIPLES OF SURGERY AND CLINICAL SURGERY, RUSH MEDICAL COLLEGE; PROF. OF SURGERY CHICAGO POLICLINIC; HONORARY MEMBER SOCIETE FRANÇAISE D'HYGIENE, PARIS, FRANCE, ETC.

The distinguished chairman of the committee of arrangements informed me that a short address of some kind would be required of me at this meeting, and that as the audience would not be confined to members of the Mississippi Valley Medical Association, some topic connected with public hygiene should be selected.

Being sincerely desirous to please my amiable friend, Dr. Love, I thought it might not be inappropriate to briefly consider a topic of interest to all the members of the Association, namely, the Drainage of Chicago.

There are some side questions connected with this subject that are of very great interest, and I shall refer to them, but the limitation of time will only afford opportunity for a statement of the sanitary problem, and of the manner in which those in authority propose to solve it.

TOPOGRAPHY AND CLIMATOLGY.

Let us glance at the topography of Chicago as it was before artificially changed.

The oldest map of this region[1] is said to be still in existence in Quebec, and bears date of 1688.

Lake Michigan is correctly outlined, and the Chicago river properly placed and the French "Fort Chicago" located at its mouth. This map gives the formation of the Illinois river from the Desplaines and Kankakee. From the report of Surgeon-General Lawson,[2] in 1840, I quote the following:

"Fort Dearborn, lat. 41° 51' N., long. 87° 15' W. This post, now abandoned,[3] is situated on the southwest shore of Lake Michigan, in the State of Illinois, twelve miles from the Wisconsin line. It is distant from the lake 250 yards, and is elevated fourteen feet above its surface. The river Chicago, which runs on the three sides of the fort, divides half a mile above it into two branches, the one north and the other south, in directions

[1] Davidson and Stuvé's History of Illinois.

[2] Statistical Report on the Sickness and Mortality in the Army of the United States, from January, 1819, to January, 1839. Washington, 1840.

[3] Fort Dearborn was established in 1804. J. B. H.

nearly parallel with the lake shore. As the bank of the lake is several feet higher than the ground in the rear, the latter is sometimes covered with water. Indeed, the whole country is so low that in its early settlement boats frequently passed, during the spring floods, over the prairies from Chicago to the Illinois river. At this post the prairie opens upon the lake four miles wide, extending west beyond the reach of the eye. Above and below this point, the shore of the lake is densely covered with large forest trees, such as the different varieties of oak, ash and hickory. The soil is generally a rich loam; in some places clay, in others sand, predominating. Limestone is found in large quantities. . . . . This position is one of our most salubrious military stations."

Dr. Drake[4] in 1848, in his classical work, wrote:

"Chicago, the commercial metropolis of Lake Michigan, stands on a low sand plain, on the western side of the lake. The breadth of this flat along the lake is about four miles, whence it runs back ten or twelve miles to the river Desplaines, an elementary branch of the Illinois. When the lake stood at a level only twenty feet higher than at present, its waters overspread this bed of alluvion, and a portion of them flowed down the Illinois. At this time it is a savanna, abounding in marshes and low sand ridges, traversed by the river just mentioned on the west and on the east by the north and south forks of the Chicago river, or creek; which, flowing nearly parallel with the lake shore, unite within it and form a short common trunk, which meanders through its centre to the lake. The water in this natural channel is twenty feet in depth, and rises and falls from the force of the winds upon the lakes about two feet; a fluctuation which tends to carry away the filth which would otherwise accumulate on its margins, from the houses on each side, and from the vessels which seek it, as the only harbor of Chicago. From the mouth of this river there is a gradual rise of the plain to the height of twenty feet; which may be attained by ascending the south fork of the river to a spot whence streams sometimes flow to the east and west on which canoes have passed from the lake into the Illinois river. The canal from Chicago to Peru now passes over that summit level which is the lowest between the Gulf of St. Lawrence and the Gulf of Mexico, being in round numbers only six hundred feet. Near the lake shore the winds are constantly blowing a fine dark colored sand on the margin of the plain, which south of town is raised into low ridgy dunes. The town-plat, from the destruction of the course aquatic vegetation, and the tramping of men and animals, is constantly becoming dryer and firmer. Beyond these influences much of it inclines to marshiness; but as it is not subject to inundation and is high enough above the Chicago and Desplaines rivers to be drained by a judicious system of ditching, it will no doubt, as population increases, be entirely reclaimed. . . . In the year 1831 the town itself was commenced, and at this time, 1848, its population is near twenty thousand. The city is supplied with water from the lake, through a hydrant system; a growth so rapid indicates its prospective importance and entitles it to the regard of the Medical Topographer. . . . . The statements of Doctors Boon, Davidson and Brinkerhoff fully sustained the impression made by the others (Brainard and Kimberly) and convinced me that the town of Chicago has been more infested with autumnal fever than Fort Dearborn had been; which goes to strengthen the prevalent opinion that the first exposure of the new soil to the sun, rain and air is insalubrious. A part of this upturning was by the plow, another by the spade in the excavation of the canal. This operation deserves some notice. The canal stretches southwesterly from the town completely across the plain. One of the contractors told me that in 1838 he had excavated a mile. The average digging was to the depth of four feet through a soft black mould, abounding in organic matter. The distance to which this silt was spread out on each side was such as to cover a parallelogram of the average width of two hundred and eighty feet exposed to the sun and rain. Nearly all who resided along the line of excavation sickened with autumnal fever; and almost all the laborers (Irish immigrants) suffered in the same way. Several died with malignant or congestive symptoms."

Such were the natural conditions, forty years ago, and now there has been placed upon the naturally unpromising site, more than a million of people, and it is estimated that since the census was taken there has been nearly two hundred thousand souls added to the population.

## DRAINAGE.

Within ten years after the period mentioned by Dr. Drake, the river had become so contaminated as to cause uneasiness, and in 1855 the Illinois legislature passed an act creating the Board of Sewerage Commissioners, and in 1856 the systematic construction of sewers was commenced, and soon the Chicago river became what it now is, little else than an open navigable sewer. It soon became evident that some system of cleaning the river must be adopted, and in 1860 the sewerage commission recommended the widening and deepening of the canal. Not only to provide a sewer outlet, but to accommodate the increasing needs of commerce with the interior. This idea soon expanded into the project of a ship canal, which now seems near realization. The legislature,

[4] On the Principal Diseases of the Interior Valley of North America. Cincinnati, 1850.

in 1889, passed "An Act to create Sanitary Districts and to remove obstructions in the Desplaines and Illinois rivers." This act created a Board of Trustees and gave them the necessary powers.

The Board have now completed the survey of the proposed canal route and are engaged in condemnation of the real property through which the canal must pass.

This conclusion was reached by the legislature only after exhaustive inquiry into the various plans proposed and the existing conditions, by the State Board of Health. That body reported, through its secretary, Dr. Jno. H. Rauch, who had for many years given the subject his careful attention, that the water supply of the city was endangered by the river emptying into the lake; and that the pumping works were inadequate to continuously change the current of the river; that sewage can not be profitably utilized as a manure, and taking out the solids by chemical treatment does not render it safe for domestic purposes; that seventy per cent. of the Chicago sewage passed down the Desplaines and into the Illinois river; and that the proposed canal would cost less than any other mode of the disposal of so large a body of sewage. The board further demonstrated in answer to the fear of those in the Illinois valley, that the river was already greatly polluted by the sewage of the several towns and cities in the Illinois basin, and that in the near future it would be necessary to flush the Illinois from Lake Michigan even if the Chicago sewage were otherwise disposed of.

The soundness of these arguments prevailed, and it is now proposed to construct a canal that will give a dilution to the sewage of 60,000 cubic feet per minute for each 100,000 of population, and not less than 24,000 cubic feet per minute when the population shall have reached 2,500,000.

The following tables were extracted for Mr. Artingstall from the report of the State Board of Health:

ANALYSIS OF WATER OF THE ILLINOIS AND MICHIGAN CANAL AND ILLINOIS RIVER.—("A.")

Parts per 1,000,000. Summer 1888. (Table from State Board of Health Reports.)

| Place. | Distance | Watershed sq. miles. | Total solids | Suspended Matter. | Chlorine. | Free ammonia | Albuminoid ammonia | Oxygen consum'd | Nitrogen as Nitrates. |
|---|---|---|---|---|---|---|---|---|---|
| Bridgeport . . | 0 | | 47.12 | 12.92 | 4.68 | 1.225 | 0.256 | 2.31 | 0 |
| Lockport. . . | 28 | | 43.12 | 6.98 | 4.61 | 1.088 | .199 | 1.62 | 0 |
| Joliet, Upper. | 33 | 1,392 | 44.17 | 9.40 | 3.91 | 0.745 | .167 | 1.57 | 0 |
| Joliet, Lower. | 34 | | 44.27 | 10.79 | 4.37 | 0.893 | .168 | 1.43 | 0 |
| Morris . . . . | 58 | 7,296 | 35.59 | 3.68 | 3.21 | 0.411 | .071 | 1.09 | .038 |
| LaSalle. . . . | 95 | 11,847 | 34.57 | 5.03 | 1.97 | .064 | .053 | 0.86 | .104 |
| Henry . . . . | 124 | 12,642 | 30.60 | 2.75 | 1.77 | .047 | .048 | 0.87 | .068 |
| Peoria . . . . | 159 | 13,479 | 32.98 | 5.43 | 1.24 | .021 | .052 | 0.98 | .089 |
| Pekin . . . . | 170 | 13,831 | 35.30 | 8.43 | 1.62 | .064 | .065 | 0.94 | .080 |
| Havana. . . . | 201 | 15,364 | 30.18 | 4.54 | 1.16 | .034 | .043 | 0 81 | .073 |
| Beardstown . | 232 | 23,444 | 39.00 | 8 47 | 0.75 | .020 | .038 | 0.74 | .062 |
| Grafton. . . . | 322 | 27,914 | 30.16 | 5.03 | 0.92 | .009 | .048 | 0.73 | .058 |
| Mississippi River at Alton | 340 | | 27.86 | 7.52 | 0.41 | .017 | .036 | 0.74 | |

ANALYSIS OF WATER OF SOME OF THE TRIBUTARY STREAMS OF THE ILLINOIS RIVER.—("B.")

Parts per 1,000,000. Summer 1888. (Table from State Board of Health Reports.)

| Place. | Total solids | Suspended matter. | Chlorine. | Free ammonia | Albuminoid ammonia | Oxygen consum'd | Nitrogen as Nitrates. |
|---|---|---|---|---|---|---|---|
| Dupage River below Joliet. . . . . | 29.47 | 1.41 | 0.58 | .042 | .035 | 0.47 | 0.31 |
| Kankakee River below Joliet. . . . . | 25.14 | 3.56 | 0.14 | .008 | .059 | 1.44 | .009 |
| Fox River below Morris | 33.03 | 4.63 | 0.42 | .012 | .047 | 0.68 | .003 |
| Big Vermillion River below Morris . . . . | 45 06 | 8.78 | 0.55 | .013 | .034 | 0.69 | .036 |
| Little Vermillion River below Morrris . . . . | 37.31 | 3.08 | 0.57 | .018 | .041 | 0.72 | .036 |
| Sangamon River below Havana . . . . . | 31.78 | 7.07 | 0.36 | .005 | .028 | 0.55 | .075 |
| Mississippi River . . . | 27.86 | 7.52 | 0.51 | .017 | .036 | 0.74 | |

The Citizens' Association of Chicago, established in 1874, composed of most influential citizens, also warmly favored the Desplaines outlet system, and by many cogent arguments favored it. The only objection worthy of consideration that has been urged against this plan is the allegation that the danger to the people drawing their water supply from the Illinois river will be materially increased. This objection cannot be set aside by a general denial. They assert that pathogenic germs in sewage are not destroyed by dilution and that the solid matters are simply deposited with silt on bars and shoals. This view has lately been strongly supported by Frankland at the Congress of Hygiene and Demography, held in London, Aug., 1891. Frankland asserts that chemical evidence of the self purification of the waters is insufficient, that there must be a bacteriological examination as well. He admits, however, that sedimentation, (or the subsidence of solid particles) carries with it a very large number of microbes, and the fact remains that dilution, oxidation and sedimentation are so far the only known means of comparative purification of running streams.

Of these the current belief is that dilution is most efficient factor, and its effects on sewage is the same as is observed in the dilution of gas from chimneys. No one claims the destruction of noxious gases, but when poured into the open air they become so diluted as to be practically harmless.

At the same time it cannot be too strongly urged upon municipal authorities, that contaminating substances be kept out of running streams as much as practicable. Garbage can always be burnt, and other substances can be disinfected before being turned into the sewer.

But notwithstanding these precautions, and notwithstanding the great dilution proposed, in my judgment, intercepting sewers, to be constructed on each side of the river, and the lake front as well, will inevitably become necessary with the growth of the city.

## THE WATERWAY SIDE OF THE QUESTION.

I have thus far only reviewed the case from

the standpoint of the sanitarian. There is another view almost as broad, and that is from the standpoint of the publicist. This involves the question of the physical effects of creating a new river 200 feet wide and 18 feet deep, the probable lowering of the lake level; the economic results of the vast waterway thus created, by providing means for increase of traffic, and additions to the trade of the valley, and the political effects of the closer commercial relations between the people on the borders of the lake, river and gulf, but as my time has already expired, I will refer you to the excellent paper of Mr. McMath, C. E., of St. Louis, and the elaborate one of Mr. Cooley.

DEFORESTATION.

I cannot close without reference to a topic of the utmost demographic importance to this entire valley, and that is, the subject of deforestation.

The National Conference of the State Boards of Health which met in Nashville, May, 1890, adopted the following resolution:

*Resolved*, That recognizing the well-known evils resulting to the whole nation from the disastrous floods which within recent years have taken place along the valleys of our great rivers; and from the destructive cyclones which from time to time occur, both of which evils have been pointed out to be due mainly to the cutting down of the forests on the mountains and along the hillsides where our great rivers take their origin, and to the violence which the wind storms obtain blowing over great tracts of practically treeless prairie, this National Conference of Health Officers desires most earnestly to bring these evils to the attention of our Federal government, our State and provincial legislatures, and other scientific and commercial bodies, urging them to take such comprehensive action as will (1) cause a survey to be made of the gathering grounds of our great rivers. (2) Preserve, and replant when necessary, these areas, with protective forest trees. (3) Establish schools whereby the principles and practice of forestry will be taught, and protect by the most stringent legislation the results of the above mentioned work. (4) Make recommendations to our towns and cities to form park associations for the planting of trees and obtaining possession of waste lands to be gradually reforested.

Last year at about this season, I made a journey through Italy and saw the Appenines extending from the north to the south of Italy, as an almost treeless, rocky ridge. The soil had long ago washed down the sides, and the almost everlasting rocks stand out as monuments of the ignorance and wastefulness of man.

We, in this yet new world, should realize that deforestation means general devastation, and that unless checked, our country may also become a desert. We may see in the orient, what may be the result of the fatalistic doctrine of "letting posterity take care of itself," and we may see in the example of Germany a nation strong and vigorous, that guards its forest trees as the "apple of its eye."

We have the power to stay the floods, to regulate the seasons, to preserve the natural water courses, and prevent much disease by increasing the tree bearing area, and surely our countrymen have wisdom enough, and patriotism enough to lend their influence toward reforesting of all waste lands, and the establishment of parks in every village.

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## CAMPHOR-MENTHOL IN CATARRHAL DISEASES.

*Read at the Seventeenth Annual Meeting of the Misssisippi Valley Medical Association, held at St. Louis, Mo., Oct. 14–16, 1891.*

BY SETH S. BISHOP, M.D.,

OF CHICAGO.

SURGEON TO THE ILLINOIS CHARITABLE EYE AND EAR INFIRMARY, ETC.

While engaged in experimenting on an improved inhaler for catarrhal patients I observed that menthol crystals and camphor gum formed a clear, oleaginous liquid on coming into contact with each other. It occurred to me that such a combination ought to have a beneficial action in catarrhal affections of the nose and throat.

I mixed equal parts by weight of camphor and menthol, and combined 20 per cent. of the resulting fluid with 80 per cent. of lavoline.

[1] Discussion on the Levels of the Lakes as affected by the proposed Lakes and Gulf Waterway by Messrs. Wisner, Cooley, Haupt, Herschel.

The first case in which I tried its effects was one from which I had removed hypertrophied tissues from the right nasal cavity and used the cautery in order to open the passage way, not only for breathing purposes, but in order to facilitate the introduction of the Eustachian catheter.

Before operating in the opposite nostril I had fallen upon this mixture and used it with such results as to render an operation on the left side unnecessary. After making one thorough application with the De Vilbiss atomizer, I found the mucous membrane blanched, the turbinate bodies shrunken, the canal considerably increased in size and the discharge diminished. The patient experienced decided relief from the stenosis.

At another treatment, on introducing the Eustachian catheter through the nostril I had cauterized, its presence provoked a violent and protracted paroxysm of sneezing. This persisted so long that it was impracticable to insert the inflater into the catheter. I managed to throw a spray of the camphor-menthol into the nostril containing the catheter. At once the sneezing stopped and did not return, so that there was no further difficulty in injecting remedies into the middle ear.

That experience led me to try it in nervous catarrh. I had just received a letter from a hay fever sufferer in Tewksbury, describing his satisfactory experience with menthol and albolene inhalations which I had recommended last year.

The relief obtained by him, Professor Lockwood and others, by the use of menthol, and the fact that the presence of camphor appeared to intensify the effects of menthol, made it reasonable to suppose that this combination would afford relief in hay fever.

The first case of hay fever in which I used it was one of the early form. A spray stronger than 10 per cent. of the mixture with 90 per cent. of lavoline, produced sneezing and temporary stenosis of the nostrils, followed the next day by increased freedom of respiration and a sense of nasal comfort. A 5 per cent. solution produced no sneezing or stenosis, but, on the contrary, left the nasal passages patulous for several days.

Another patient, living in a suburban town, began using camphor-menthol combined with lavoline just before the usual time for her attacks to begin, and enjoyed immunity from the suffering by inhaling it two or three times a day. She is unfortunately located, being surrounded with the luxuriant vegetation of the country, and it speaks well for the remedy that it was able to keep the disease at bay. The last time she came for treatment, she had been able to prevent the development of the paroxysms, although she had noticed occasionally some premonitory symptoms. She brought me some specimens of the ragweed in full blossom, and notwithstanding that she attributes her suffering every year to the pollen of this plant, she was free from its effects then.

One of my assistants, Dr. Hall, did not receive so much benefit from these inhalations. While they gave him temporary relief from sneezing and stenosis, the symptoms would return again in a short time. In this instance the remedy was less effective than in any other in which I have employed it, but he used a 24 per cent. solution in lavoline, which is too strong for sensitive noses.

However, it is not to be expected that any single inhalant will prove equally successful in all cases. And the pathology of the disease leads me to believe that no local medication alone will ever prove completely remedial in hay fever.

Within the past few days, ex-President Lockwood, of the United States Hay Fever Association, has written me as follows:

"You can safely say some very good things for the camphor-menthol spray and inhaler. For twelve years I have been driven to the White Mountains every summer on account of hay fever, and I am used to expect a serious relapse on my return home. Last year this relapse was very serious, and accompanied with severe asthma. This year I prepared the camphor and menthol, and I had no more than started from the Jefferson station when sneezing began, but I checked it at once with the inhaler. It was simply an ounce bottle, with wide neck and glass stopper. My use of it, and the comfort following, was noticed by some of my fellow sufferers, who understood well what it meant. A number of them used it freely, with pleasant results, and that little bottle was the good genius of the journey.

"The heat and dust made our return to the city the most uncomfortable in twelve years' experience, and yet, to the surprise of myself and friends with me, this was the first time of my getting through a return trip with no hay fever or asthma, and it was due to the camphor-menthol inhaling. In mild forms, or at an early stage of this malady, both spray and inhaler are very effective. Since my return home, the heat, humidity and dust-laden air have brought the malady on again in great force, but the camphor-menthol greatly ameliorates my suffering. During this incessant day and night asthma, the spray keeps the nasal passages open, and so far its help is grateful to the asthma."

I take this occasion to pay a tribute to Professor Lockwood's microscopical researches, and to his unceasing endeavors during the years of his presidency of the United States Hay Fever Association to direct its work along the lines of scientific investigations concerning the cause and cure of hay fever.

Dr. B., of Kansas, came to have me operate for opening up the nostril, and for ear treatment. It was impossible for him to breathe through the nostril, so greatly hypertrophied were the turbi-

nates. To pass the smallest Eustachian catheter was out of the question. I succeeded in getting the effect of a 25 per cent. solution in the anterior and posterior nares, with the result of opening the canal in one treatment sufficiently to afford nasal respiration and sufficient space for catheterization. Another treatment increased the freedom of respiration, and subsequent treatments maintained the patulous condition of the nostrils, thus obviating the necessity of any operation with the knife, saw or cautery.

While writing these observations, an old college classmate, Mr. H., of Hutchinson, entered my office, suffering from an attack of acute laryngitis. He was unable to speak aloud. I gave him two inhalations during the forenoon, first with a 5 per cent. solution, and later with the 10 per cent. The following morning his voice had returned with nearly the customary strength and smoothness. After one inhalation more, his voice became normal, and all symptoms of laryngitis vanished.

One of my assistants, Dr. Collins, restored his voice from an enforced whisper to a good speaking condition in twenty-four hours by treating an attack of laryngitis with the inhalations, varying in strength from 10 to 20 per cent.

In hypertrophic nasal catarrh, with excessive discharge, a 25 per cent. solution, *i. e.*, 12½ per cent. each of the camphor and menthol, and 75 per cent. of lavoline, has checked the discharge, given it a healthy character, and restored nasal respiration.

I have had four assistants conducting experiments parallel with mine. The experiences of two have been briefly referred to. One of the others, Dr. Davey, reports having obtained results corresponding to mine, and the fourth, Dr. Campbell, compares the action of camphor-menthol with that of cocaine, excepting the powerful anæsthetic effect of the latter.

The important point to be emphasized in the use of this, as well as other potent remedies, is the choice of the proper strength in adapting it to each individual case in order to secure the best results. In chronic hypertrophic rhinitis in a person of dull sensibilities, a 25 per cent. solution may be used with excellent effect; whereas, in the opposite extreme of temperament, in which the Schneiderian membrane is exquisitely hypersensitive, a first inhalation stronger than the 3, or 5, per cent. solution, may appear to act as an irritant.

I have injected a 10 per cent. preparation in lavoline into the Eustachian tube, which was closed so firmly that it was impossible to inflate the middle ear by the Valsalva or Politzer method, with the result of opening the tube so well that on the following day there was no difficulty in injecting remedies through it into the tympanic cavity. This has occurred repeatedly.

No ill results have followed the injection of 5 and 10 per cent. solutions into the middle ear, but in several cases of catarrhal affections of that cavity the hearing was improved and the head has felt clearer after the injections.

I have applied the full strength camphor-menthol to eczematous eruptions and found that it relieved the pruritus and reduced the swelling and redness. It had a similar effect in herpetic eruptions.

Finally, camphor-menthol contracts the capillary blood-vessels of the mucous membrane, reduces swelling, relieves pain and fullness of the head, or stenosis, arrests sneezing, checks excessive discharges and corrects perverted secretions.

70 State street, Chicago.

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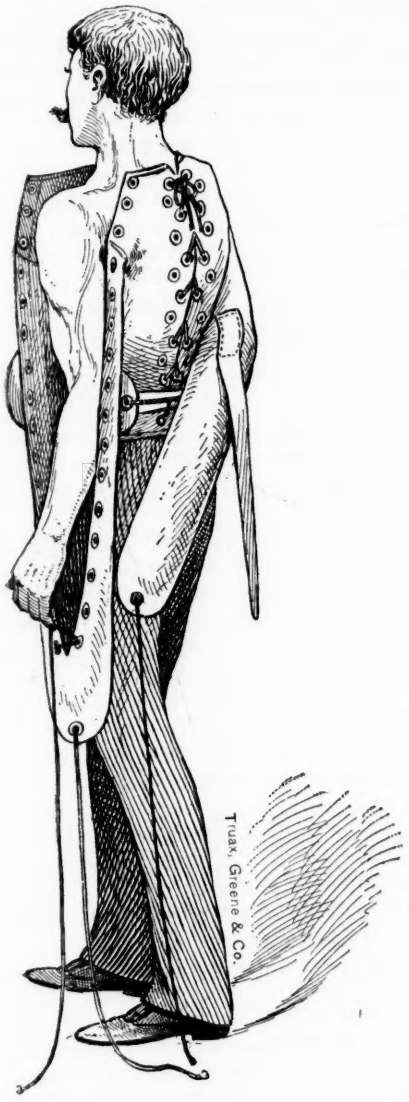
## SHOULD PHYSICAL RESTRAINT BE USED IN THE TREATMENT OF THE INSANE.

BY ARTHUR LOEWY, M.D.,
ASSISTANT PHYSICIAN COOK COUNTY HOSPITAL FOR THE INSANE.

A question important both to the physicians in charge of the insane, and to the general public, is, "Shall physical restraint be used in the treatment of the insane?" This question has agitated the minds of officials in whose charge the insane have been placed, and has been for them a difficult problem to solve. I think that I may justly claim that those who have been intimately connected with this work will say that physical restraint, when properly and judiciously used, is a very important factor in the intelligent care and treatment of the insane. Physical restraint may be used for the following objects: First. To prevent the patient from injuring himself or herself. Second. To prevent the patient from injuring others. Third. When, for some bodily injury or ailment, it becomes necessary to apply restraint to secure proper action of some therapeutic reagent. Fourth. When patients remove their clothing. In those cases of insanity where there is a disposition on the part of the patient to injure him or herself, by thrusting the hand through window panes, by attempts of self-injury by throwing himself or herself on the floor, or by striking the head against the wall, or if the patient be suicidal, and make the most desperate attempts at self-destruction, the question arises, How shall we restrain this patient so that he may not injure himself, nor succeed in accomplishing that which is so dreaded in all hospitals for the insane, namely: suicide? The general public, as a rule, holds up its hands in horror when some sensational report is circulated by the press, that patients in a given asylum have been seen who had their hands in restraint, some strapped to the bench—or even greater,

when it is said that a patient has been seen in a strait jacket. In all such cases as I have cited above, our first object must be to restrain the patient by carefully watching his every move, and prevent the carrying out of those designs of self-injury or self-destruction. But in doing this we must have a requisite number of attendants, so that no bodily injury be done in caring for him. In most of our public institutions we find so




many patients of the class I have just depicted, that it is an utter impossibility to assign to this special duty a sufficient corps of attendants. It is under these circumstances that physical restraint is justifiable. If a patient attack other patients in the ward, he must be so restrained that he can do no injury to others; at the same time it must be taken into consideration that restraint in this case cannot be called beneficial to that patient's mental condition. It is simply a means of protection to those patients who are in the same ward, and to those in whose charge this particular patient may be. In the treatment of any number of the insane, the care of each case has a bearing on every case in the same ward. Hence, to prevent injury to other patients, and oftentimes even to preserve their lives, restraint must be applied. For either of these conditions, namely: a patient attempting self-injury or injury

to those about him, the following means of restraint suggest themselves: First. The patient is seated on a bench, a strap is fastened around the patient's waist and through the arm of the bench. Second. The wristlets. Third. Mittens and muff. Fourth. Strait jacket. Should a patient in a paroxysm of furor attack those about him, and other means having failed, physical restraint becomes necessary, I would give preference to the

first means. I have repeatedly seen, in my association in the care of the insane, patients rapidly become quiet and composed when fastened to the bench. Should, however, this fail to accomplish the end desired, namely: to prevent the patient from injuring him or herself or other patients, some other means must be employed. In such an event I should prefer wristlets, and following this the muff and mittens. For female patients, should the first means fail, the strait jacket, properly applied, is much more to be preferred. I have already stated that the care of one case has a bearing on all other cases in the same ward, and should we fail to use restraint when a patient attacks those about him, we may by this neglect cause direful results. A blow administered by one patient to another is as quickly returned, and the excitement of such an encounter will only add fuel to the fire, and patients heretofore quiet become maniacal and pugilistic. In all such cases, restraint must be used before injury, be it great or small, can be done. Seclusion of patients is to be deprecated; no patient, because he becomes maniacal, should be forced into a room and locked there until the furor has passed away. It is here that the acuteness of the insane may be manifested, and self-destruction be accomplished in a very short time.

The next condition in which physical restraint must be employed, is for the intelligent treatment of the insane when suffering from some bodily injury or ailment. A patient who has injured the upper extremities by thrusting them through window panes, or who has sustained an injury, as dislocation or fracture; or when local applications must be made, the patient resisting all attempts to properly care for him, restraint must then be applied. The question which then presents itself is, "What kind of restraint shall we use under these conditions?" If splints have been applied to the arm, wristlets, mittens or the muff are useless, because in their application there would be great danger of shutting off the blood supply. Again, if the injury were one of the hand, it would be impracticable. Again, the old strait jacket is impracticable, because we could not watch the circulation, and if frequent changes of dressing were necessary, it would be a hinderance to proper treatment. To replace all modes of restraint in this class of patients, I have made improvements and additions to the old strait jacket, a cut of which is herewith shown.

The Benson Strait Jacket, as this is known, consists in having an opening in the front corresponding to the one in the back, and further, an opening in the sleeve from the neck to the tips of the fingers. By means of this jacket, a patient being confined to bed with some ailment requiring constant use of poultices, the poultices can be changed without raising the patient to the sitting posture, as must be done when the old jacket is used, thereby avoiding the dangers of death from heart failure. The opening in the sleeve permits the physician to have knowledge at all times as to the condition of the injured member, and should swelling ensue after the application of a splint or cast, immediate knowledge can be had of the fact. An attachment is placed at the elbow, which is brought around the back and fastened to the cord at the tip of the fingers, thereby permitting each arm to be put in restraint separately. Thus we may place less tension on the injured arm than we would on the uninjured one. In the old jacket, each arm when in restraint has equal tension on it. I desire here to call attention to the fact that, when the jacket must be used as under the first and second conditions cited, it will be found that if the arms are tightly drawn, they are thus placed in an unnatural position, and pain is the result. If, though, this attachment placed at the elbow be brought around and tied to the cord at the tips of the fingers, the arms will be placed in a natural and comfortable position, as may be seen in the figure before alluded to. The fourth condition where physical restraint is justifiable, is where the patient removes his clothing. For the prevention of this object, we may use all the restraint I have already cited, the kind of restraint being wholly governed by the mental and physical condition of the patient.

For the maniacal we must use the jacket, the muff, mittens or wristlets. For cases, though, of melancholia or dementia, where the patient attempts the removal of clothing, I have devised a canvas wristlet, made thus: A piece of canvas is taken, somewhat larger than the size of the wrist. Parallel with the longest side of the cloth, two oblong openings are made. The loops are then cut in this same piece to fit in the openings made before, and through these loops a belt is drawn, and fastened in the back. The advantages of this canvas wristlet are these: First. There is less idea of restraint in their use, and they cannot injure the patient. Second. They can readily and easily be made. Third. Cheapness in construction.

I have thus laid down the four conditions under which I hold physical restraint to be justifiable. Never, I hold, should restraint be used as a punishment for misconduct. Never after a patient has done what he should not, but to prevent him from doing that which tends to his own disadvantage, and which prevents or postpones the recovery of his mental health, or for the safety of others, should restraint be applied.

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PROF. JOHN J. REESE has resigned the chair he has so long filled in the University of Pennsylvania. His successor has not yet been appointed.

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SATURDAY, OCTOBER 24, 1891.

## SYPHILITIC SPONDYLITIS IN CHILDREN.

At the recent meeting of the American Orthopedic Association, DR. JOHN RIDLON, of New York, read a paper with the above title.[1] He says "syphilitic spondylitis differs in no way from syphilitic joint disease located elsewhere, except as it is modified by its peculiar surroundings. In the superficial joints, where the infiltration of the soft parts and bone can be readily seen and felt, the onset of the disease is very slow, and months may pass before pain is complained of or disability become serious; but in the spine, where the lesion is located in and about the anterior surface of the vertebral bodies, far beyond sight and touch, the slow advance of the early symptoms escapes recognition and the onset usually appears to be comparatively rapid. On any motion the distant pain is complained of, and sometimes within a few days the patient is unable to stand without support. If located in the dorsal region, the kyphosis soon appears with a sharp angle, formed of but one or two spinous processes, and with a long sweeping curve above and below. In the lumbar region, the kyphosis is slow to appear, often not appearing until marked psoas-contraction can be made out, and perhaps not until an abscess has formed; but lordosis is an early and well-marked symptom."

[1] Med. News, Vol. LIX, p. 453.

The description certainly affords no clue to the differentiation of this supposed syphilitic disease and the common tubercular joint, and the author admits that his earlier efforts to establish this disease met with so much resistance at the hands of his colleagues that he did not even publish his original paper, written some five years ago. Moreover, his cases, when examined, were pronounced by others to be tubercular. Nevertheless, he still feels convinced that syphilitic disease of joints, closely resembling the tubercular disease, does exist. He claims that the syphilitic disease shows a tendency, like syphilis elsewhere, to hyperplasia rather than to molecular disintegration.

The diagnosis is made chiefly upon the detection of syphilis in the parents or grandparents, and upon the presence of other syphilitic lesions in the child. RIDLON calls particular attention to the age of the child, and expresses himself as believing that in children under three years of age spondylitis, associated with chronic disease of some other joint, or in another portion of the spine separated by a healthy area, is more frequently syphilitic than tuberculous.

In this connection it is interesting to recall the observations of FOURNIER on late manifestations of hereditary syphilis, particularly the bony lesions. FOURNIER describes these lesions under three forms,—osteo-periostitis, gummy osteo-periostitis, and gummy osteo-myelitis. The first of these is probably closely connected with the conditions described by DR. RIDLON. Syphilis certainly by preference attacks the epiphyses of the bones. In the case of the lower end of the femur this may certainly very closely resemble disease of the joint. However, according to FOURNIER, the tibia is the bone most frequently attacked in late syphilis, and following this the radius and humerus.

By way of treatment RIDLON makes use of both mechanical and medicinal means. He finds rest in bed preferable to braces as a rule. Internally he uses mercury and iodine in large doses. If the stomach will tolerate it, one-thirtieth to one-twenty-fourth of a grain of the bichloride or biniodide, is given with five to forty grains of potassium iodide three times a day.

Whether DR. RIDLON be correct or not, he certainly has obtained some good results in treatment, and it is always wise in medicine to ques-

tion a single cause which is credited with being always responsible for a certain morphological lesion.

## WAVES OF ZYMOTIC INFLUENCE.

At irregular periods we are called upon to chronicle the passage over our country of a contaminating, epidemic influence that manifests itself at various points with more or less virulence. In some localities the wave seems to be but a gentle breeze, as shown in an outbreak of scarlet fever attacking very many children, but easy of management, and followed by few, if any, deaths. Another locality develops a focus of diphtheria that has in it all the characteristics of a veritable cyclone. Those who are stricken with the disease, are so overwhelmed with the poison as to be at once clasped in the arms of the grim monster, and in spite of all known remedial measures the victims quickly succumb to his fatal embrace.

The present season will be remembered as one of extended epidemic influence, in which every considerable centre of population has suffered to some extent from the blow; and while the Nation rejoices in the season's most bountiful yield of the earth's fatness, very many communities are stricken and in mourning because of the zymotic wave that is passing over the land.

A mournful thought in this connection is in reference to the fact that in nearly every instance the effects of this pervading influence might have been ameliorated, by a recognition and enforcement of known sanitary laws.

Small-pox has been literally driven from our country's bounds. Absolute isolation of first cases will stop threatened epidemics of scarlet fever and measles. Typhoid, whether produced by a microbe or a ptomaine, is preventable by a removal of the cause of the infectious poison. This poison is known to be most frequently taken into the system through the drinking of polluted water or contaminated milk.

As the country and cities become more and more densely populated the danger from these sources increases, thus making a continuous demand upon physicians and health authorities for a never ceasing vigilance.

A most important duty is the education of the people, and particularly the youth who are in school, in regard to the causes of infectious diseases and their prevention.

Diphtheria is very prevalent in a neighboring city (South Bend, Ind.). This disease is known to be propagated not only by direct contagion, but indirectly through the inhalation of a poisoned or contaminated atmosphere. The unsanitary conditions of the city referred to are such as to continue the influences of the infectious disease that is carrying many of its children to an untimely grave.

At considerable expense the streets have been sewered, but singular as it may appear, the council persistently neglect or refuse to compel householders to make proper connections therewith.

In the city of Chicago there were more than 200 deaths last month from typhoid fever, which would indicate not less than 2,000 cases in the city at that time, nearly every one of which was produced either by drinking the lake water without sterilizing by boiling, or by the use of milk in a similar manner.

The health authorities of every city should exercise the greatest care in seeing that dairy cows are provided with a sufficient supply of pure water. Two hundred deaths a year is quite a severe penalty for any city to pay for neglect in obtaining a potable water supply, but when the tax runs up two hundred deaths per month, such a wail should go up to the powers that be, as to permit neither sleep nor rest from superhuman efforts to right the wrong that exists. The question is not so much one of financial cost as one of life and health.

We are glad to know that the physicians of the city are fully alive to the importance of this momentous subject. Concerted action on the part of the medical profession would have a wonderful influence in forwarding the work of the Water Works Board and Drainage Commission.

## TYPHOID FEVER.

The subject of typhoid fever was considered at the Chicago Medical Society, on the evening of the 21st inst. Four papers were presented, and the three hours session proved to be of great interest. The opening paper by DR. N. S. DAVIS, Jr., on the "Etiology of Typhoid Fever," was confined to the discussion of the subject as developed during the last eighteen months. He paid full and careful attention both to those who ad-

vocated the causative agency of the KOCH-EBERTH bacillus, and those who doubted it. Leaning, himself, to the view that the weight of the argument is in favor of the KOCH-EBERTH bacillus, he gave very full expression to the views of VAUGHAN that typhoid fever is not a specific disease, but a group of diseases caused by a variety of poisons. VAUGHAN considers that it is essentially a filth disease, arising under conditions resembling in general those concerned in the production of cholera infantum. In the discussion VAUGHAN'S work in the production of pseudo-typhoid bacilli was brought out. By subjecting certain microörganisms found in drinking water, to continuous high temperature, resembling that met with in typhoid fever, VAUGHAN has found that they lose their original properties and acquire the peculiarities heretofore supposed to be distinctive of the KOCH-EBERTH bacillus, viz., a resistance to stains, and the formation of an invisible growth on potato. RODET and ROUX by similarly treating the *bacterium coli commune*, find that it likewise acquires these same properties. On these grounds it is urged that the means of recognizing the KOCH-EBERTH bacillus being uncertain, the views which have already been expressed regarding it, based on this mode of recognition, must be held in abeyance. Quite recently this matter was reviewed somewhat fully in these columns.

The "Complications of Typhoid Fever" were discussed by DR. JOHN H. CHEW, and the "Treatment of Typhoid Fever" was the subject of DR. WILLIAM E. QUINE'S paper. DR. QUINE paid particular attention to the subject of the temperature, and made a strong plea for the temperature as the leading symptom in typhoid, and as the principal index for treatment. The excellent effects of the systematic use of the cold bath were strongly presented, and the reason of their effects laid to the door of temperature reduction. He does not advocate, however, the indiscriminate use of the baths in all cases, as is urged by their extreme advocates in Germany, and admitted that they favored the occurrence of relapse. He also urged a discriminating use of the modern antipyretics, but discouraged their prolonged employment.

The concluding paper of the evening was by DR. WELLER VAN HOOK, on "Laparotomy in Perforation in Typhoid Fever, and Report of a Successful Case." In DR. VAN HOOK'S case the perforation occurred during the second week of the disease, and the operation was made about four hours after the accident. He made a small incision in the median line, and found the perforation quite readily. Discarding trimming the edges of the wound as unnecessary and as consuming valuable time, he closed the opening by three rows of LEMBERT sutures. Regarding the perforation as probably the only one, no further examination of the bowel was made, but the wound immediately closed after a proper *toilette* of the peritoneum. The fever continued its usual course for two weeks longer, and the patient made a complete recovery.

This is DR. VAN HOOK'S third laparotomy for perforation in typhoid, and his first successful case. In reviewing the literature of the subject, DR. VAN HOOK found that altogether there have been nineteen laparotomies performed for this condition with four recoveries. In some of these cases, however, the diagnosis is doubtful, typhoid not being positively distinguished from appendicitis. Rejecting the doubtful cases, the statistics show twelve laparotomies with one recovery.

To DR. VAN HOOK, then, belongs the honor of the first undoubted successful operation for typhoid perforation.

## ETHYLENE BROMIDE IN EPILEPSY.

DONATH has given in the *Therapeutische Monatshefte*, some considerations favorable to the adoption of the above named drug as a substitute for potassium bromide, in those cases where the latter cannot be continuously used without occasioning disagreeable symptoms, which troubles are for the most part chargeable to the potassium in DONATH'S opinion. He therefore sought for a bromine preparation in which the action of the latter would be highly accentuated and at the same time more pleasant than in the combinations that have hitherto been chiefly employed. Accordingly he has tried ethylene bromide in ten cases for several months, and is enabled to report that in all these cases, he regards the action of his new remedy as more happy than the potassium salt. The greater number of these cases had been of long standing and some of them had for years been under the influence of potassium bromide. Under the ethylene

these cases have shown an improved condition for the present; the convulsions have been diminished in force and reduced in frequency. In some, the convulsions are brought to a point where it is proper to describe them as mere muscular contractions with the customary loss of consciousness. Fifteen other cases have been under treatment a shorter period of time, too short, in fact, to warrant any declarations as to their improvement. DONATH recommends the following prescription: ℞. Ethylene bromide, spirits of wine, āā 32 minims, oil of peppermint, 2 minims. Dose: Five to fifteen drops three times daily. This dose may be raised to seventy drops, two or three times daily, for adults; or as high as twenty drops for children. It should be borne in mind that one minim of the ethylene is equal to two drops. The taste of the drug is sweetish at first, but afterwards leaves a burning impression. Its odor reminds one of chloroform. It is soluble in water and milk, and miscible with alcohol or oil. Its administration may also be effected by capsules containing three or four drops of the drug mixed with six drops of the oil of bitter almonds. This drug should not be confused with bromide of ethyl, which has been used to some extent during the past year as an anæsthetic.

## EDITORIAL NOTES.

MR. J. HARRISON WHITE, the former business manager of this JOURNAL, is in no way connected with its management, and has no authority to make any statements in regard to its present conduct or affairs.

DR. THOMAS F. WOOD.—Dr. Wood, of Wilmington, N. C., has been chosen to succeed himself, in the Board of Health of his State, as Secretary and Treasurer for a term of six years. He is one of the representatives of the State Medical Society, duly elected by ballot at the last conjoint session of State Society and State Health Board.

LARYNGEAL TASTE.—Michelson has made, under Langendorff's direction, some careful experiments as to the distribution of the nerves of taste to the under or inner side of the epiglottis, and the results have been published in Virchow's *Archiv*. The presence of the end organs, the taste bulbs, have been frequently noted, but the demonstration of a recognition of sapid substances has first been clearly made by Michelson. His tests were conclusive, with control experiments by electrical contact, the "electrical taste," so that it may be accepted as proved that the nerves of taste have in part a laryngeal distribution.

MEDICAL POPULATION OF CANADA.—The *Montreal Medical Journal*, quotes the following as a correct estimate of the number of practitioners in the Dominion, arranged by provinces:

| | |
|---|---|
| Ontario | 2,300 |
| Quebec | 1,100 |
| New Brunswick | 170 |
| Nova Scotia | 300 |
| Prince Edward Island | 60 |
| Manitoba | 140 |
| Northwest Territory | 50 |
| British Columbia | 60 |
| Total | 4,180 |

AN INCOMPATIBLE OF SODIUM BROMIDE.—According to the *Medical Press*, the following incompatibility has been pointed out: When solution of sodium bromide and cocaine hydrochlorate are mixed the alkaloid is precipitated. The writer adds: "It will be well to bear this in mind, for with the cocaine merely suspended a serious, and, in an infant, even a fatal accident might easily result."

# SOCIETY PROCEEDINGS.

### American Dermatological Association.

The Fifteenth Annual Meeting was held at Washington, September 22 to 25, 1891, in conjunction with the Congress of American Physicians and Surgeons.

The meeting was called to order by Dr. F. B. Greenough, of Boston, who made the opening address.

The Report of the Committee on Nomenclature was made and after discussion was accepted.

The first paper read was by Dr. H. G. Klotz, of New York, entitled "Dermatitis Hæmostatica." It was discussed by Drs. Piffard and Bronson.

Dr. L. A. Duhring, of Philadelphia, followed with a paper, "Report of a Case of Universal Erythema Multiforme." It was accompanied by a colored portrait of the case and specimens of large plates of exfoliated epidermis shed by the patient during the latter part of the course of the disease. It was discussed by Drs. Hyde, Duh-

ring, Sherwell, Shepherd, Fox, Allen and Bronson. Dr. Shepherd asked if any drug had been administered for the rheumatism that was a marked feature in the case, to which Dr. Duhring replied, "No! The treatment had been entirely negative." Dr. Fox had seen a case somewhat resembling that of Dr. Duhring in which there was a question if the eruption had been caused by some drug that had been taken for a coëxisting gonorrhœa. He thought that it was a purely accidental occurrence. We often see cases of dermatitis exfoliation following other diseases, such as psoriasis.

Dr. Shepherd, of Montreal, then read a paper upon "An Unusual Case of Sarcoma involving the Skin of the Arm, requiring Amputation."

This was followed by a paper by Dr. S. Sherwell, upon "Multiple Sarcomata. History of a Case Showing Modification and Amelioration of Symptoms with large Doses of Arsenic." In the discussion Dr. Zeisler mentioned brilliant results in a case of lupus sarcoma for the administration of arsenic. In a case of pigmentary sarcoma he had given the drug without effect. Dr. J. C. White, of Boston, had seen good effects from use of the drug in one case of sarcoma. Dr. Robinson, of New York, had not had much success with arsenic. He believed that many cases of multiple sarcoma were in reality microbean in origin and not true tumors.

The next paper read was by Dr. R. B. Morison, of Baltimore, on "The Hypodermic Use of Hydrargyrum Formamidatum in Syphillis," which he recommended as a treatment of great usefulness, especially as a means to fall back upon in some cases in which older forms of treatment did not succeed, or in which such a plan as that of inunction was not practicable. He always used Merck's preparation and found that it did not cause much pain nor prove objectionable. He had never used any of the insoluble salts. In the discussion Dr. Corlett said that he had found hypodermic injections of mercury of great use in some cases, such as in those cases in which the stomach has given out. Dr. Klotz had employed hypodermic injections in syphilis. While it was doubtless of value in some cases, for most cases older methods of treatment are quite as good. Dr. Greenough said that while greatly interested in the subject of hypodermic medication in syphilis, he had found it impossible to get his patients to submit to it. He thought it was useful only in exceptional cases in which other plans could not be used. Its ultimate result was no better than that of other plans.

Dr. J. Grindon, of St. Louis, read a paper upon "Lichen Scrofulosorum," which gave rise to a long discussion. Drs. Robinson, Piffard, Sherwell, Shepherd, Corlett, Bronson and Greenough all had seen cases of this rare disease.

Dr. Sherwell, of Brooklyn, read a paper on

MULTIPLE SARCOMATA OF SKIN.

History of a case showing modification and amelioration of symptoms with large doses of arsenic.

The author, after pointing out numerically several interesting points, chief among which were, largeness of therapeutic dosage, tolerance of them by patient, complete and rapid subsidence of tumors under such dosage, rapid recurrence under suspension of same, originality of treatment instituted, etc., goes on to give a history of the patient with sarcomata, supplemented with a further history by Dr. John B. Wheeler, of Burlington, Va.

Dr. Sherwell removed in all, from this patient, thirty growths, some of which were quite large, one 3¼ inches in diameter; Dr. Wheeler about a year later in a series of operations removed the immense number of one hundred and seventy (170) large and small. In the interval between his leaving Dr. Sherwell's care and coming under that of Dr. Wheeler, he had interrupted or almost suspended treatment spoken of above, which had at the time of his leaving Dr. Sherwell caused the complete or almost complete disappearance of all growth. They recurred too rapidly for Dr. Wheeler to operate, when Dr. Wheeler adopted same internal treatment as that which Dr. Sherwell had instituted with the most decided and gratifying results, namely, the same rapid disappearance of the growths. The case ended by his leaving Dr. Wheeler's care in good condition and doing exceedingly well, irregularity or total interruption of treatment, and as before recurrences of growths, followed in a few months by death.

SECOND DAY—THURSDAY, SEPT. 23.

The Committee on Statistics made its report through its Chairman, Dr. J. H. Hyde, of Chicago.

This was followed by a discussion on "Tuberculosis of the Skin," which was opened by Dr. J. C. White, of Boston, who presented "Its Clinical Aspects and Relations;" by Dr. J. T. Bowen, of Boston, who presented "Its Pathology;" and by Dr. G. H. Fox, of New York, who presented "Its Treatment." In the discussion Dr. H. G. Piffard drew attention to the fact that French and other competent observers had surmised the connection between what was then called pulmonary consumption and lupus and the so called scrofuladermata. He had done so in 1878. Recent invention of the Abbe condenser and Zeiss lenses had enabled us to discover the tubercle bacillus, and to establish the relationship on pathological grounds. He himself believes that lupus erythematosis is fully entitled to the name "lupus," as he thinks that it, too, is of bacillary origin. Nor is he alone in his opinion. Cold abscess of the skin is probably due to the same cause, as is

also rodent ulcer. He would agree with Dr. White in believing that we should have some collective term for all the various tubercular diseases. In treatment he would advocate cutting out the whole diseased patch, unless it was very extensive. Next to the knife he would place the actual cautery after removal as much as possible of the growth with the curette. Arsenic and chloride of zinc are also to be depended on.

Dr. C. W. Allen commended multiple scarification, and combined pyrogallol and mercurial plasters; he thought that there might yet be a future for Koch's tuberculin.

Dr. J. Zeisler was in thorough accord with Dr. White. By his experience at the Hospital, St. Louis, he had become converted to the use of the galvano-cautery. He would also testify to the efficacy of the solid nitrate of silver stick which, bored into the skin, would act both as a knife and caustic. He was not enthusiastic as to tuberculin.

Dr. E. B. Bronson believed that it was best to retain for some time our present terminalogy for the different tubercular diseases. In regard to tuberculin, he had seen improvement in some cases treated with it, but on the whole his experience had made him regard the remedy unfavorably. He had had good success with the dental burr, as first advocated by Dr. G. H. Fox. The nitrate of silver stick was also good.

Dr. J. N. Hyde was glad that Dr. White had come to accept local contagion as the cause of lupus, a view that he himself was among the first to advocate. He thought that in this country there were but few cases of lupus with a history of pulmonary tuberculosis in the family, or with tubercular diseases elsewhere. He did not believe in the treatment by scarification. Both the curette and nitrate of silver were serviceable in proper cases. In regard to tuberculin, he thought it possible that in time we might find something of value in it, but it was not so now.

Dr. L. A. Duhring would retain the old names for some time to come. He had not found lupus associated with general tuberculosis in private practice. He would recommend pyrogallol most highly, using it in the form of a plaster, with resin and soap plaster, three of the resin plaster and one of the soap plaster. This is to be worn continuously. Local use of bichloride of mercury he had not found beneficial. Tuberculin he had found helpful, though he did not report any case of cure.

Dr. P. A. Morrow would agree with Dr. White that as lupus and some other diseases had a common etiological factor, we should place them together under a common heading. He advocated the use of multiple scarifications, followed by mercurial plaster. For destruction of the small lupus nodules he recommended punctate cauterization with a white hot instrument. Chloride of zinc was superior to pyrogallol as a caustic. Excision will probably increase in favor as the means of treating lupus.

Dr. A. R. Robinson would not include lupus under a common heading with tuberculosis on account of its different clinical aspect.

Dr. H. G. Klotz was not yet satisfied with our present knowledge of the infection of the skin with the bacillus tuberculosis.

Dr. L. D. Bulkley is not satisfied with any of the plans for the external treatment of lupus. Internally he has great faith in phosphorus as a curative agent, the nodules softening up and disappearing under its continuous use. He would corroborate Dr. Fox's advocacy of fuchsin. As to pyrogallol, that, too, was admirable. He applies it in powder form, pure, after scraping. Salicylic acid, combined with pyrogallol, is also useful.

Dr. S. Sherwell was doubtful of the relationship of tuberculosis to lupus.

### THIRD DAY, FRIDAY, SEPT. 24.

Dr. Duhring read a paper upon "Notes of a visit to the Leper Hospital of San Remo, Italy." In reply to a question by Dr. White, after the paper was read, he replied that no attempt at segregation was made in San Remo. There were but few cases in the hospital and they were in an ordinary ward of a general hospital. They were not permitted to leave the confines of the hospital.

Dr. P. A. Morrow, of New York, then followed with a paper on "Skin Grafting," and showed a case in which the operation had been done by the method described by him and with admirable results.

In the discussion of the case Dr. Duhring spoke in high praise of the operation of skin grafting as practiced by Dr. Jas. E. Garrettson. Dr. Clarke asked if Dr. Morrow thought that the inclusion in the graft of the deeper structures of the skin, as recommended by him, would give any better results then more superficial ones. To this Dr. Morrow replied that he thought they would be more certain to take, and he had had not a single failure. He had made more than fifty grafts of hairy skin upon a cicatricially bald scalp, and all of them had taken, and from many of them the hair was growing nicely. Dr. Sherwell had had good results, also, by deep grafts.

Dr. P. A. Morrow, of New York, then read a paper on "The Treatment of Alopecia Areata," and was followed by Dr. L. D. Bulkley, of New York, with a paper on "A Therapeutic Note on Alopecia Areata." The two papers were discussed together. Dr. L. Leisler believed alopecia areata was due to a parasite, though perhaps there were some cases due to a neurosis. The latter were the very obstinate ones. He was in favor of treating all cases by epilation about the

patches. With pilocarpine he had had no success. He regarded the use of a concentrated solution of common salt as a good remedy for stimulating hair growth.

Dr. W. T. Corlett spoke in favor of acetic acid as a remedy in alopecia areata. Cases, however, recovered spontaneously.

Dr. G. H. Fox was always pleased to hear any one speak with confidence of any treatment of alopecia areata, as Dr. Bulkley had done of carbolic acid. He was rather skeptical of any remedy. A strong solution of ammonia had proved as effective as any in his hands. He thought that general treatment of the patient was quite as important as any local application. Dr. J. E. Graham had never seen any cases that would lead him to believe that alopecia areata was contagious. He did not think that because antiparasitic remedies were useful, that this was a proof of the parasitic nature of the disease. Dr. P A. Morrow thought that there had been a sufficient number of cases of contagion reported to satisfy any reasonable doubt of the contagiousness of the disease. He quoted Eichhoff's report, in which a number of cases were traced to one barber. He had had one case of probable contagion.

Dr. L. A. Duhring said that in spite of a great deal of study of alopecia areata he had never been able to find any parasite in the disease, nor to be convinced that the disease was contagious. He believed that there was a disease simulating alopecia areata, and often reported as such, that sometimes occurred epidemically, but was not alopecia areata. He regarded arsenic taken internally as very valuable in the treatment of the disease. He could see no reason for depilitating the healthy hair about the patches.

Dr. J. C. White said that we were still wanting positive evidence of both the parasitic and the neurotic element in the etiology of the disease. Clinical evidence points both ways. He had seen cases of apparent contagion. He had seen 30 cases of a disease simulating alopecia areata, and that were not cases of ring worm, occurring in an asylum, which probably were instances of the so-called contagious alopecia areata. He did not think that they were true alopecia areata.

His favorite remedy was half a drachm of croton oil to eight ounces of turpentine used daily. Of course it failed in some cases, as do all remedies. If it failed he used many other remedies that had been commended, but they did not do any better. He did not believe there was any specific remedy.

Dr. H. W. Stelwagon had never been able to trace a case to a contagious origin. Local stimulation is more to be relied on in treatment. He was fond of equal parts of turpentine, cantharides and tincture of capsicum, with arsenic internally.

Dr. J. N. Hyde believed that the time would come when alopecia areata would be regarded as a symptom. Some cases were doubtless parasitic and some neuritic in origin. In bad cases he used creosote locally. After say the 45th to 48th year of life the chances of recovery were greatly decreased.

Dr. H. G. Klotz had had one case in which hereditary syphilis was probably the underlying cause, the boy getting better when under specific treatment.

Dr. C. W. Allen believed that the disease was parasitic and thought that he had in his own practice observed a case of contagion. He thought that internal treatment was valuable. Naphthol and pefrogallal had both proved useful in his hands.

Dr. S. Sherwell believed the disease to be of neuritic origin alone. Stimulation was most to be depended on.

Dr. J. Grindon had never met with a case that suggested either a parasitic or contagious origin of the disease.

Dr. F. B Greenough used in practice a half drachm of carbolic acid in an ounce of water.

Dr. L. D. Bulkley in reply to a question of Dr. Morrow, said that he used the 95 per cent. solution of carbolic acid only to a small portion of the scalp at a time. It should be brushed over lightly at first so as to benumb sensibility and then rubbed in more thoroughly. He had not used it elsewhere than on the scalp. The skin is red for a few weeks; this disappears and the hair grows. He also administers strychnia and phosphoric acid, and keeps up the nutrition of the patient.

Dr. R. W. Taylor, of New York, read an account of a case of "Angioma Pigmentosum of Atrophicum," by Dr. A. W. Brayton of Indianapolis. It was accompanied by an excellent portrait.

Dr. J. C. White stated that his investigations showed that the disease was not limited to Russian Jews, but was met with also in persons of English and French descent.

Dr. Bronson then read his paper upon "The Etiology of Pruritus."

### Third Day, Afternoon Session.

It began with a short discussion of Dr. Bronson's paper on "Pruritus," in which Drs. Zeisler and Morrow took part, the discussion being closed by Dr. Brown Bronson. Dr. W. T. Corlett, of Cleveland, then read a paper upon "Diseases of the Skin, Associated with Derangement of the Nervous System." It was discussed by Drs. Bronson, White, Fox, Duhring, Zeisler, Allen and Sherwell, who took various views of the cases reported, all agreeing that it was very difficult to diagnose what the cases were without having seen them.

Dr. L. A. Duhring read his paper entitled "Experiences in the Treatment of Chronic Ringworm in an Institution for Boys." He recited the many remedies he had used. In the discussion Dr. G. H. Fox said that Dr. Duhring's experience was both interesting and valuable. He had had considerable experience in the New York Skin and Cancer Hospital. He had found chrysarobin useful, as had Dr. Duhring. He began the treatment by clipping the hair short, and shaving, either only over the patches or over the whole scalp and applying chrysarobin in traumation. He was tired of greasy applications. Hydronaphthol plaster, as recommended by an European physician, had proved more satisfactory than chrysarobin. He advocated epilation where practicable.

Dr. J. Zeisler advocated pyrogallol as a parasiticide. Dr. Duhring, in reply to a question, said that some of the cases recovered in six weeks, and some not for a year. Dr. White thought that while chrysarobin was a good remedy, it was not a safe one to use outside of an asylum or hospital. He recommended a combination of sulphur, carbolic acid, and naphthol in ointment form. Dr. Stelwagon recommended an ointment composed of tar, sulphur, and citrine ointment. Dr. Sherwell advised keeping the scalp saturated with a mild oil and covered with a skull cap. Dr. E. Wigglesworth believed that it is necessary for us to have regard to the nutrition of our patients. Dr. C. W. Allen bore testimony to the value of chrysarobin. Dr. L. A. Duhring, in concluding, said that the cases were all well when he left off treatment, and that they remained well for at least one year. Epilation he found did not repay the vast amount of labor it cost. He regarded ointments as most useful remedies.

Dr. J. Zeisler, of Chicago, then read his paper on "Epilation; its Range of Usefulness as a Dermato-therapeutic Measure." In the discussion, Dr. G. H. Fox said that he was glad to hear any one advocate epilation in sycosis, as he had found it a most useful remedy. A sulphur paste after epilation is valuable. He had not found epilation so promptly curative as had Dr. Zeisler, while he laid more stress on diathetic management than did the latter. He was sure that epilation was useful in some cases of chronic ringworm of the scalp. Dr. H. G. Klotz spoke also in favor of epilation in sycosis, though he had cured many cases without it, notably with mild naphthol ointments. He thought epilation to be valuable in syphilitic lesions about the hairs, as well as in all the pustular affections implicating the hair. Dr. L. A. Duhring had not been able to practice epilation on his patients on account of the pain it caused, specially on the upper lip. He could not see much use in epilating in alopecia areata when the hairs were firm about the patch. Dr. P. A. Morrow said that he did not think that it was necessary to pull out all the hairs about the bald patches, but it was a good thing to make traction on all of them and to remove all that were loose. Epilation was a requisite in all rebellious cases of trichophytoses. If the hair is removed by a quick sudden movement, the operation is nearly painless. Dr. H. W. Stelwagon believed that many cases of sycosis could be cured without epilation. He would speak in special praise of Fleming's solution in trichophytosis, diluting it at first one part to five or six of water, and gradually increasing the strength to just short of marked irritation. Dr. S. Sherwell spoke of the connection between catarrhal conditions of the nose and sycosis of the upper lip. Dr. J. N. Hyde said that the last time he was in London and Paris he had observed that epilation was quite generally practiced about the patches of alopecia areata. In closing Dr. Zeisler said that when epilation was properly performed it was almost painless. As he regards alopecia as a parasitic disease spreading at the periphery he epilated about the patches to prevent their spreading.

### FOURTH DAY—MORNING SESSION.

The first paper was by Dr. J. E. Graham, upon "Molluscum Contagiosum." Dr. Bowen said that there was little question but that the disease was contagious. It is still unproven whether certain bodies found in molluscum are or are not coccidiac. Dr. Allen had no doubt about the contagiousness of the disease, and related cases of the disease spreading in an asylum from one case. Excision is never necessary. They can readily be squeezed out, and then lightly touched with a caustic. He believed in their parasitic origin. Dr. E. Wigglesworth likewise cited a case of contagion. Dr. J. C. White, while believing that molluscum was contagious, was not prepared to accept the psorosperm as its cause. Dr. J. N. Hyde pointed out that in the statistics for the year just closed, seventeen cases of molluscum contagiosum were reported, viz.: nine from Boston, five from New York, two from Chicago, and one from St. Louis. Dr. F. B. Greenough believed them to be contagious. In treatment he simply bores them out with nitrate of silver stick. Dr. S. Sherwell concurred in the belief of their contagion. Dr. J. E. Graham thought, from evidence so far brought forward, that the so-called psorosperms were simply degenerated epithelial cells.

Dr. J. N. Hyde, of Chicago, then read his paper, "Note Relative to Pemphigus Vegetans." In the discussion, Dr. L. A. Duhring said that he had had the opportunity of seeing the case described, and would corroborate what Dr. Hyde had said of it. It certainly was more of the nature of pemphigus than anything else. Dr. Bowen

had seen a case of Neumann's in Vienna, and this one brought that one back very vividly to his mind. He regarded the term "pemphigus" as a most indefinite one, and thought that it gave very little idea of the pathology of the case under discussion. Dr. S. Sherwell had seen a case with analogous symptoms in a woman, which was cured by ovariotomy. Dr. J. E. Graham related the history of a similar case of his own. It became much better under arsenic, but suffered a relapse.

Dr. J. N. Hyde, in closing, said that in his case there was no disease of the ovaries. He regarded the prognosis in his case as not good.

Dr. H. W. Stelwagon then read his paper on "A Study of Mycosis Fungoides." It was discussed by Drs. Hyde, White, Hartzell, Bowen, Duhring and Fox. Dr. Hartzell emphasized the infectious nature of the tumors, and thought that we must look to inoculation experiments for its proof. Dr. Bowen spoke of the disagreement among pathologists as to the exact nature of the tumors. Dr. Duhring said that the disease was a general one of the skin, and did not seem to affect other organs to any extent. He believed it to be an infectious disease. It may be regarded as on the border line between an inflammatory new growth and a tumor. Dr. Fox related a case of apparent infection of the disease in the New York Skin and Cancer Hospital. He also spoke of the early diagnosis of the disease, and reported a case that at first looked like an eczema marginatum, but afterwards developed the characteristic tumors.

Dr. Stelwagon, in closing, said that he found, in looking up the literature of the disease, some fifty or a hundred reported cases. It was exceptional for the disease to begin as tumors.

Dr. M. B. Hartzell, of Philadelphia, then read his paper on "Lymphangioma Circumscriptum, with Report of a Peculiar Case." It was discussed by Drs. Stelwagon and Bowen.

Dr. H. G. Klotz, of New York, followed with a paper: "Remarks on Carbuncle, with Report of a Peculiar Case." It was discussed by Dr. Bowen, who spoke of the remarkable paper by Dr. Warren, of Boston, describing the pathological anatomy of the disease.

Dr. C. W. Allen then made some remarks on "Erythema of Nalvus Nuchæ." Dr. Zeisler thought it probable that erythema nuchæ was often due to pressure and rubbing. Drs. Fox, Duhring, Grindon and White also took part in the discussion.

Dr. J. Grindon read a paper on "A Case of Lichen Ruber." Dr. Zeisler would be inclined to view the case as one of lichen planus. In this disease plantar and palmar thickenings are apt to form. Arsenic often cures these patients. Dr. S. Sherwell agreed with Dr. Zeisler in his diagnosis, though the case presented many exceptional features; one especially being the involvement of the nails. Dr. White believed the case to be one of lichen planus, and spoke of the uncertainty surrounding the whole question of the lichen group. Dr. Hyde said that he always found the polygonal outline of the papules to be well marked, something that does not seem to be familiar to the Germans and French. Dr. Duhring agreed with the previous speakers in this diagnosis. The polygonal shape and umbilication are often wanting.

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# DOMESTIC CORRESPONDENCE.

## LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The health of the city continues to be in a very satisfactory condition. During the week ending September 12th 747 deaths were reported, representing an annual death rate of 23.05 per thousand inhabitants in a population of 1,690,076, against 822, the average number for the same week during the past five years, and the average rate 23.48. This is an increase of 11 on the mortality of the preceding week, and this slight increase was chiefly due to diseases of the respiratory organs. The deaths from this class of diseases were, bronchitis, 25, pneumonia, 51, and phthisis, 102. In contagious diseases there were 24 cases of measles, with one death, 80 cases of diphtheria, with 21 deaths, and 42 cases of typhoid fever, with 9 deaths. Diarrhœal diseases, one fatal in 112 cases, and there were 341 deaths among children under 5 years of age. The births reported for the week exceeded the deaths by 258; which is unusual in this city; although it must be borne in mind that while the necessity of obtaining from the Health Department a burial permit in every instance secures the report of every death occurring in the city, the registry of births is by no means so complete.

It is generally conceded that an important factor in the preservation of public health in a great city is a cleanly condition of the streets, and the mayor of New York, in consequence of the representations of the Board of Health in regard to the unsatisfactory manner in which his duties have been performed, has very properly removed the Commissioner of Street Cleaning. In a communication addressed to the mayor on September 15th, President Wilson, of the Health Department, called his attention to reports of the regular monthly inspection of the streets for August, of a special inspection made on on the 14th, by sanitary officers of the Department, and of Dr. Morean Morris, Chief Inspector in charge of the Summer Corps of Physicians; after which he went on to say: "Cleanliness of the streets is regarded by this Department as most important to the public health, and it is apparent from the reports also referred to that their condition is far from satisfactory in this particular, and that this subject, for sanitary reasons, demands special attention."

It seems that some time ago the mayor asked the Board of Health to make a thorough inspection of the streets,

as regards their sanitary condition and the effect upon the public health; and it was upon the strength of the reports thus furnished him that he decided to take the step which he did. According to the city statutes now in force, the head of the Department of Street Cleaning is removable by the mayor, provided such removal meets with the approval of the Board of Health, whenever the mayor shall certify that to his judgment such removal is required in the public interest. It is needless to say that in the present instance when Mayor Grant had certified to this effect the Health Board promptly gave its approval of the removal of the Commissioner.

The new incumbent of the position, Mr. Thomas S. Brennan, who, it is believed, will conscientiously and thoroughly carry out the work he is paid to do, is a man with an exceptionally large experience in the administration of the charitable and criminal institutions of the city. Also, it may be stated, he has an exceptionally large acquaintance among the medical profession of New York, with many of the most prominent of whom he came in constant contact for a long period of years. This career in many respects is an interesting one. In 1859, at the early age of 16, he was appointed a night watchman at the Bellevue Hospital, and was soon promoted to the captain of the watch and night storekeeper. He was next transferred to Charity Hospital, on Blackwell's Island, where he became steward and deputy warden. In 1866 he was made warden of Bellevue Hospital, in which capacity he remained until 1875, when he was appointed one of the Commissioners of Charities and Correction; a position which he held contiuuously for fourteen years and eight months. These commissioners, it will be remembered, have charge of the affairs of all the hospitals, asylums, prisons, and other charitable and penal institutions belonging to the city.

Sanitary superintendent Wm. A. Ewing, who has just returned from abroad where he has been making a study of the sanitary methods in vogue in some of the principal cities, expresses the opinion that while the streets of New York are certainly kept as clean as those of most of the latter, so far as our sanitary regulations in general are concerned we are far in advance of any of the European cities he visited. The plumbing in the hotels and public buildings here, he says, is eminently superior to anything of the kind abroad, and our supervision and care of contagious diseases, he also states, are the very best that he has seen anywhere. While in London Dr. Ewing attended the International Congress of Hygiene and Demography, and he found that the exhibits sent by the New York Health Department were by far the largest and best there. He took with him to the Congress and placed on exhibition plans of the plumbing and drainage, and of the lighting and ventilation of some of the best tenement houses here, as well as the plans of older tenement houses which had been altered in order to improve their sanitary condition; and these plans excited so much interest among the sanitary engineers and architects present that at their request for more time to examine the exhibits he left them in London for a week after the close of the Congress.

There has lately been brought to this city a remarkable case of parasitic growth, the subject of which, born in India, is known as the double bodied Hindoo boy. A number of physicians and others were invited to a private inspection of the lad at the Metropolitan Hotel, and Dr. George D. Bleything has made the following report concerning him: "I have examined the boy Laloo in the presence of Dr. W. G. Thompson, of the New York University Medical School, Dr. J. Blake White, of Charity Hospital, and a number of medical gentlemen and representatives of leading newspapers and medical periodicals, and find him to be a remarkable case of arrested development in fœtal life. The boy himself is a fine, bright, well developed youth of eighteen years, and attached to the extremity of his sternum is the incomplete figure of a twin. The arms are given out, without scapulæ, from the sternum of the young man. The trunk is short and incomplete, but it terminates in a pelvis with which the legs are connected. There would seem to be no separate heart in the parasite, and the pulse, both radical and axillary, is synchronous with that of the autosite. There is anchylosis of the joints in the undeveloped child. The young man is conscious of a sensation when this second body is roughly touched." It is said to be the opinion of competent surgeons who have examined the boy, that the parasitic growth could be removed without serious injury to him; but in that case his value as a museum "freak," which is now very great, would, of course, collapse. As it is, he does not appear to suffer much inconvenience from his unsightly incumbrance, and he is very agile in his movements. P. B. P.

## Illinois Army and Navy Medical Association.

*Editor Journal of Am. Med. Assoc'n.*—At the meeting of the Army and Navy Medical Association, held in Chicago, October 7th and 8th, the following resolution was offered and unanimously adopted, viz.:

WHEREAS, In view of our high esteem for Dr. John H. Rauch, as a medical officer of the United States Army during the war of the Rebellion, as a gentleman of worth and culture, and for his most efficient services as a member of the Illinois State Board of Health, whereby the sanitary conditions of the State and Nation have been greatly improved, the standard of medical education elevated, and the interests of profession and people most thoroughly guarded, therefore,

*Resolved*, That we hereby express our regret that so efficient a member of the Board of Health of the State of Illinois, should have retired from that body. No more active, efficient, earnest worker, can be found among the medical profession, to fill that important position, and we believe that the interests of the people as well as those of the medical profession, will be advanced by his recall to duty thereon. Very respectfully,

EDWARD P. BARTLETT, Secretary.

Springfield, Ill., October 14th, 1891.

## Lost Papers.

*Editor A. M. A. Journal*, 68 Wabash Ave., Chicago, Ill.

*Dear Sir:*—On yesterday the clerk of the Maxwell House here, handed me a package of papers, which proved to be the notes and original papers read in the Section of Practice of Medicine, at the meeting of the Association held at this place in May, 1890. They evi-

dently were lost, and only now have come to light. If you desire the package, I will forward it to you, as many of the essays bear the marks of careful preparation, and no doubt the authors would be glad to either get their copy again or have it published by you. Very truly yours, J. D. PLUNKET, M.D.

Nashville, Tenn., October 17, 1891.

The misplacement and apparent loss of the papers of the Section on Medicine last year was a source of much trouble to the Editor of THE JOURNAL, and every possible means was used for their recovery. We are glad that even at this late date they are discovered, and suggest that the authors of those papers write to Dr. J. D. Plunket, of Nashville, enclosing stamps for their return.

## BOOK REVIEWS.

MASSACHUSETTS STATE BOARD OF HEALTH REPORT FOR 1890. Boston: Wright & Potter Printing Company, State Printers.

The two volumes before us surpass in several points any previous publication by this State Board. Part I, containing 850 pages, is devoted to the examinations of water supplies and inland waters, made from 1887 to 1890, by engineers, chemists, biologists and health officials, under the supervision of Mr. Hiram F. Mills, engineer member of the Board, whose elaborate classifications and tabulations form the principal part of the first volume. Suitable maps, plates, photo-micrographs and charts abound in the two volumes. Part II, comprising 900 pages, describes the experimental investigation on the purification of sewage by filtration and by chemical precipitation, also on intermittent water filtration, and on the beginnings of bacteriological research, both as to water and sewage. This latter research is under the direction of Professor W. T. Sedgwick, State Biologist, and is the means of bringing to the front some original discoveries by Mr. E. O. Jordan, "in this new branch of sanitary science." The bacterial flora of the sewage examined at the Lawrence station was found to be large and various, some of which have not been hitherto described. The two species most frequently observed in the sewage of Lawrence were the *bacillus coli commune*, and a species isolated and named, for the first time, by Mr. Jordan, as the *bacillus cloacæ*. This report is ultra-technical in scope, it scarcely contains an allusion to typhoid fever, whereas in point of fact it is little else than an earnest and most laborious attempt to defend the State against the constantly advancing fever-foe.

ESSENTIALS OF ANATOMY AND MANUAL OF PRACTICAL DISSECTION, together with the Anatomy of the Viscera. Prepared especially for Students of Medicine, by CHARLES B. NANCREDE, M.D., Professor of Surgery and of Clinical Surgery in the University of Michigan. Fourth Edition, revised and enlarged by an appendix containing Hints on Dissection, by J. C. DA COSTA, M.D., based on the last edition of Gray's Anatomy. Thirty handsome full page Lithographic Plates, in Colors, and 188 fine Wood-cuts. Philadelphia: W. B. Saunders. 1891.

The first edition of this work on the "Essentials of Anatomy" was issued in 1888, and it has proven to be one of the most popular of "Saunders' Question Compends." That students of medicine, for whom it was especially prepared, have made a demand for it, is fairly indicated by the fact that this edition begins the fourteenth thousand placed on sale. It may, in many respects, be considered an epitome of Gray's popular work on general anatomy, at the same time having some distinguishing characteristics of its own to commend it. The plates are of more than ordinary excellence, and are of especial value to students in their work in the dissecting room. It can be recommended to them.

APPLETON'S SCHOOL PHYSICS embracing the results of the most recent researches in the several departments of Natural Philosophy. American Book Company, from the press of D. Appleton, & Co. 1891.

This first edition, prepared by J. D. Quackenbos of Columbia College, Alfred M. Mayer of Stephens Institute of Technology, Francis E. Nipher of Washington University, Silas W. Holman of Massachusetts Institute of Technology, and Francis B. Crocker of Columbia College, needs no further assurances than is given by their names and their official positions that the work is authoritative, and that it will be found to be useful.

Presenting, as it does, a view of Natural Philosophy, as interpreted and accepted with the light of modern science and investigation and thus brought fully abreast of the present day, it will be of especial service to students of medicine who have been denied the advantages of a collegiate training.

ATLAS OF CLINICAL MEDICINE, by BYROM BRAMWELL, M.D., etc. Assistant Physician to the Edinburgh Royal Infirmary, etc. Volume i, Part ii. Edinburgh: T. and A. Constable. The University Press. 1891.

Part second of this excellent work has just been issued and it is fully equal to the first part, recently issued.

This number treats of

First: Addison's Disease, clinical investigation of Addison's Disease. Two cases simulating Addison's Disease.

Second: Melanotic Sarcoma with Pigmentation of the Skin. Clinical investigation of cases of Melanotic Sarcoma.

Third: Hodgkin's Disease. Clinical investigation of cases of Hodgkin's Disease.

With it are superior illustrations of the text, and with additional plates showing Molluscum Fibrosum. Xeroderma. Pigmentosum. Mania.

Should the high standard which characterizes the two numbers of the work already issued, be maintained it will prove a valuable addition to clinical medicine that will be welcome and that should be so well supported by the profession as to encourage authors and publishers to issue more works of the kind.

ESSENTIALS OF PHYSIOLOGY. By HOBART A. HARE, M.D.

This is one of Saunder's exceedingly useful little compends, and is one of the best of question compends. The author has done his work thoroughly and well, and no one knows better how to present those points useful to the student than Dr. Hare. The plates of the cranial nerves from Arnold are superb.

# MISCELLANY.

DR. THOS. F. RUMBOLD, of St. Louis, is now sojourning in California. Twenty-five years' exclusive office practice has undermined his health. He will remain there a year longer. His address is San Francisco, Hotel Pleasanton.

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THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.—Preliminary programme of the session of the Southern Surgical and Gynecological Association to be held in Richmond, Va., November 10th, 11th, and 12th, 1891.

PAPERS TO BE READ.

The President's Annual Address, Louis S. McMurtry, M.D., St. Louis, Mo.

Remarks on Systemic Infection from Gonorrhœa, Illustrated by Cases, Bedford Brown, M.D., Alexandria, Va.

The Rational Treatment of Peritonitis Based upon the Consideration of the Pathological Conditions Present, W. D. Haggard, M.D., Nashville, Tenn.

A Medico-Legal Aspect to Pelvic Inflammation, W. W. Potter, M.D., Buffalo, N. Y.

Complications in Pelvic Surgery, and How to Deal with Them, Joseph Price, M.D., Philadelphia, Pa.

Cholecystotomy—Report of Case—52 Gallstones and 10 Ounces of Pus Removed—Success, W. B. Rodgers, M. D., Memphis, Tenn.

Some of the Complications of Psoas Abscess, J. McFaddin Gaston, M.D., Atlanta, Ga.

Laparotomies Performed in the Past Year, Thomas Opie, M.D., Baltimore, Md.

Imperforation of the Rectum, Geo. Ben. Johnston, M. D., Richmond, Va.

A Case of Induced Abortion for the Relief of the Nausea and Vomiting of Pregnancy, with Remarks, Christopher Tompkins, M.D., Richmond, Va.

The Principle of Drainage as Applied to Surgery of the Deep Urethra, F. W. McRae, M.D., Atlanta, Ga.

The Neuroses of the Genito-Urinary System in the Male, Frank Lydston, M.D., Chicago, Ill.

Nephrectomy, with Report of Cases, Edwin Ricketts, M.D., Cincinnati, O.

Venomous Serpents of the United States, and the Treatment of Wounds Inflicted by Them, Paul B. Barringer, M.D., University of Virginia.

A Report of Some Additional Cases of External Perineal Urethrotomy Without a Guide, J. Edwin Michael, M.D., Baltimore, Md.

Growth of Fibroid Tumors of the Uterus after the Menopause, Jos. Taber Johnson, M.D., Washington, D. C.

The Part the Shoulders Play in the Production of Laceration of the Perineum, with Suggestions for its Prevention, W. D. Haggard, M.D., Nashville, Tenn.

The Pedicle in Hysterectomy. How Formed; Its Subsequent Behavior; Its Final Condition, I. S. Stone, M.D., Washington, D. C.

A Case of Pelvic Abscess, John Brownrigg, M.D., Columbus, Miss.

A Case of Cyst of the Mesentery, with Remarks, J. A. Goggans, M.D., Alexander City, Ala.

The Female Uretha, K. P. Moore, M.D., Macon, Ga.

Medico-Legal Aspect of Intestinal Surgery, J. D. S. Davis, M.D., Birmingham, Ala.

Albuminuria; Its Relation to Surgical Operations, J. W. Long, M.D., Randleman, N. C.

Senile Gangrene, Frank Prince, M.D., Bessemer, Ala.

Hæmorrhage *versus* Shock, W. L. Robinson, M.D., Danville, Va.

Treatment of Gallstones, with Report of Cases, W. E. B. Davis, M.D., Birmingham, Ala.

(Title of paper not determined), Hunter McGuire, M. D., Richmond, Va.

(Title of paper not determined), Duncan Eve, M.D., Nashville, Tenn.

(Title of paper not determined), A. V. L. Brokaw, M. D., St. Louis, Mo.

(Title of paper not determined), Chas. A. L. Reed, M. D., Cincinnati, O.

(Title of paper not determined), W. F. Westmoreland, M.D., Atlanta, Ga.

LOUIS S. MCMURTRY, President.

W. E. B. DAVIS, M.D., Secretary.

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*Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 10, 1891, to October 17, 1891.*

Capt. George T. Beall, Medical Storekeeper U. S. A., granted leave of absence for one month. During absence of Capt. Beall, Asst. Surgeon Chas. B. Ewing, U. S. A., attending surgeon, St. Louis, will take charge of the medical purveying depot in that city.

Captain Charles M. Gandy, Asst. Surgeon U. S. A., is relieved from duty with Army Medical Board, to take effect on its final adjournment, and ordered to Ft, Yellowstone, Wyo.

Capt. Robert B. Benham, Asst. Surgeon U. S. A., is relieved from duty at Ft. Hamilton, N. Y., and ordered to Mount Vernon Bks., Ala., for duty.

First Lieut. William N. Suter, Asst. Surgeon U. S. A., is relieved from duty at Ft. McKinney, Wyo., and ordered to Ft. Grant, Ariz., for duty.

First Lieut. Harlan E. McVay, Asst. Surgeon U. S. A., is relieved from duty at Ft. Mackinac, Mich., and ordered to Ft. Wingate, N. M.

First Lieut. James D. Glennan, Asst. Surgeon U. S. A., is relieved from duty at Ft. Riley, Kan., and ordered to Camp Oklahoma, Oklahoma Ter.

First Lieut Merritte W. Ireland, Asst. Surgeon U. S. A., is relieved from duty at Jefferson Bks., and ordered to Ft. Riley, Kan.

Capt. John M. Banister, Asst. Surgeon U. S. A., granted leave of absence for four months.

First Lieut. William N. Suter, Asst. Surgeon U. S. A., granted leave of absence for one month, to take effect on or about October 15, 1891.

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*Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending October 17, 1891.*

Surgeon A. F. Magruder, ordered to the "Boston."

Surgeon W. S. Dixon, detached from the "Boston," and granted leave for two months.

P. A. Surgeon E. H. Marsteller, ordered to special duty at Baltimore, Md.

P. A. Surgeon N. H. Drake, detached from the "Albatross," and granted leave for two months.

P. A. Surgeon F. W. F. Wieber, detached from the "Pensacola," and ordered to the "Albatross."

Surgeon George P. Bradley, detached from Naval Hospital, Chelsea, Mass., and ordered to the receiving ship "Wabash."

Asst. Surgeon F. G. Braithwait, detached from the "Wabash," and ordered to Naval Hospital, Chelsea, Mass.

P. A. Surgeon H. G. Beyer, ordered to Naval Academy, Annapolis, Md.

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*Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending October 10, 1891.*

Surgeon John Vansant, granted leave of absence for twenty-three days. October 8, 1891.

Surgeon W. H. Long, granted leave of absence for thirty days. October 1, 1891.

Surgeon J. B. Hamilton, to represent the Service at the meeting of the Mississippi Valley Medical Association. October 2, 1891.

Surgeon J. H. Gassaway, leave of absence extended five days. September 28, 1891.

P. A. Surgeon W. A. Wheeler, granted leave of absence for thirty days. October 7, 1891.

P. A. Surgeon C. T. Peckham, to represent the Service at the meeting of the Mississippi Valley Medical Association. October 2, 1891.

P. A. Surgeon W. D. Bratton, granted leave of absence for thirty days. October 7, 1891.

P. A. Surgeon W. J. Pettus, to proceed to Norfolk, Va., for temporary duty. October 2, 1891.

P. A. Surgeon G. M. Magruder, granted leave of absence for twenty days. October 7, 1891.

P. A. Surgeon R. M. Woodward, granted leave of absence for thirty days. October 6, 1891.

Asst. Surgeon G. T. Vaughan, granted leave of absence for thirty days. October 6, 1891.

Asst. Surgeon J. O. Cobb, to proceed to Buffalo, N. Y., for temporary duty. October 7, 1891.

Asst. Surgeon G. M. Guiteras, to proceed to Mobile, Ala., Pensacola and Mullet Key, Fla., on special duty. October 10, 1891.

Asst. Surgeon B. W. Brown, to report to the medical officer in command, San Francisco, Cal., for duty. October 3, 1891.